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COMPUTERWORLD

Unix camp deals with host envy

Key issues: Network, systems management

By Jean S. Bozman
NEW YORK

Concerns about open systems standards moved to the back burner at last week's Unix Expo '94, as users focused on the nitty-gritty issues of building and maintaining open systems applications.

UNIX EXPO

With many of last year's pilot projects in open systems already in production, users said they are worried about network and systems management, daily operations and security.

"When people started to look at open systems and client/server, few cared about systems management," said Tsvi Gal, vice president of information systems at the Bank of America in Concord, Calif. "Only when people start to put things into production are they going to see that they need [such software tools]. So it's often an afterthought."

Rather than waiting for Unix standards to fall into place, many IS managers said they would like to see unified utilities, such as those used on the mainframe, for open systems. And many vendors

Unix, *page 14*

PC pricing reconsidered

Free NT test drive debuts

By Stuart J. Johnston

In a move to push users on the brink of buying into Windows NT, Microsoft Corp. has teamed up with four hardware vendors to offer a free trial run reminiscent of large systems vendor programs.

Under the so-called Solution Server program, serious customers can test-drive systems that have been completely configured and are ready to run NT Server 3.5 and Microsoft's BackOffice server suite for 60 days free of charge.

However, there is a catch.

The Microsoft document announcing the Solution Server program states that "customers are required to purchase eight hours

Windows NT, *page 149*

WINDOWS NT

Microsoft shipped about half as many copies of Windows NT in the first year as initially planned. By the end of fiscal 1998, the company expects to have increased sales of NT and BackOffice by 10 times to $1.5 billion, according to company documents.

Chastised firms may offer cuts

By Computerworld staff

Bowing to user pressure, executives from Microsoft Corp. and Lotus Development Corp. last week said they will review — and very likely change — pricing structures for their enterprise software.

Both companies have encountered strong criticism since introducing products and pricing changes a few weeks ago. The changes were meant to move their business software pricing from desktop and workgroup models to enterprise models. Users perceived these changes as costing them more money, not less.

Microsoft drew fire for drastic pricing changes when it introduced its BackOffice server suite in mid-September. The main com-

Pricing, *page 149*

JOHN OWENS

Lotus' Jim Manzi (left) and Microsoft's Steve Ballmer: *Rethinking their firms' price strategies*

Subscriber privacy for sale

By Mitch Betts
WASHINGTON

The privacy of subscriber data compiled by on-line services is suddenly a hot issue. A congressional panel last week kicked off a broad investigation after learning that America Online, Inc. rents data on its 1 million subscribers to direct marketers.

The inquiry began the same day a public opinion poll found that 51% of Americans are concerned that service providers on the so-called information superhighway will be

Privacy, *page 149*

Private property

Three out of four consumers said the following privacy safeguards are important for any interactive service that compiles subscriber profile data for on-line advertising:

Provide advance notice of data collection and how it will be used	77%
Give subscribers control over types and timing of advertising	76%
Let subscribers review their profile and correct errors	74%

Base: 1,000 U.S. adults. Multiple responses allowed.

Source: Louis Harris and Associates, Inc., New York

Inexperience waylays wireless

By Michael Fitzgerald

Wireless communication was supposed to waltz into the enterprise information structure this year. But as the first-ever CDPD Forum Software Developer's Conference kicks off this week in Santa Clara, Calif., it appears that vendors are stumbling over their own unfulfilled promises.

While aggressive users are working on pilots, many companies continue to question wireless technology's viability in the short term. Even vendor officials expect 1995 to be the beginning of widespread implementation of wireless.

Busy signal

The Cellular Digital Packet Data protocol has come under the most scrutiny, perhaps because it raised the highest hopes. The CDPD network still does not exist and will be nowhere near interoperable this year. CDPD is a wireless digital protocol that enables users to send short bursty messages or pieces of information. It

Wireless, *page 16*

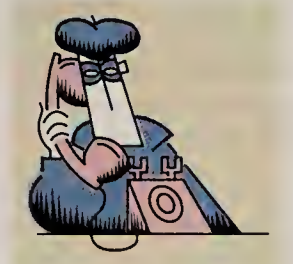
Toll fraud rings in high cost

By Ellis Booker and Gary H. Anthes

The arrest last week of an MCI Communications Corp. employee accused of electronically pilfering 60,000 calling-card numbers is as much a story about impressive fraud detection systems as it is about the increasingly computer-savvy criminals they try to catch.

Toll fraud costs the nation's carriers and their customers $6.5 billion per year and is growing at a 20% rate annually, said Bernie R. Milligan, president of Communications & Toll Fraud Specialists, Inc., a Houston consultancy.

In the case disclosed last week, MCI switch engineer Ivy James Lay reportedly collected 60,000 calling-card numbers during a six-month period and then sold them to an international crime ring. The ring then sold them to Americans in Seattle, Philadelphia, Minneapolis and Chicago, who in turn sold them to European computer users. The scam ultimately led to use of some of the card numbers to pirate software from U.S.-based on-line computer networks and bulletin boards.



Companies are at greater risk of computer-based crime from employees than from outside hackers. One analyst estimated that 15% to 20% of long-distance fraud this year will involve phone company employees or installers.

Big bucks

MCI officials estimated that the entire criminal operation cost it more than $50 million in revenue.

Another telephone company employee, at Cleartel in Washing-

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Newspaper

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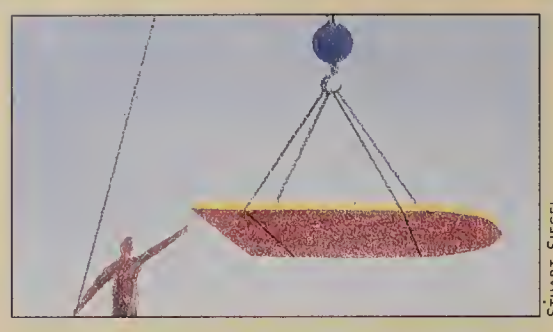
What's Inside

October 10, 1994

UNDER CONSTRUCTION



STUART SIEGEL

Client/server systems management vendors are breaking new ground with integrated packages, frameworks and point products. Applications from Computer Associates, Hewlett-Packard and IBM net low Buyers' Satisfaction Scorecard ratings. And Microsoft's systems management server earns initial approval, but advanced features are missing, Firing Line users say. See CW Guide to Systems Management, *page 107*.

NEWS

- A tight fit between Microsoft's server software and future releases of **Windows NT** could put the squeeze on competitors. *Page 4*
- Lotus is rolling out management tools meant to help the company evolve **CC:Mail and Notes** into enterprise products. *Page 6*
- **Pentium sales** during the fourth quarter may be lower than anticipated because of lukewarm corporate response. *Page 8*
- IBM is ready to push **APPN**, but it probably won't take off until 1996. *Page 12*
- Users anticipate running **PowerPC** with a variety of operating systems but say they are dissatisfied with the short list of choices. *Page 15*
- IBM clarifies how its **object strategy** will unite the company's operating systems and bring the company into the future. *Page 15*
- **Sybase** repriced its System 10 database and plans to put it on several low-end systems to combat workgroup-level offerings from rivals Microsoft and Oracle. *Page 16*

DESKTOP COMPUTING

- Some vendors are rolling out **minisuites** for users who want to mix and match the individual packages in suites. *Page 45*

WORKGROUP COMPUTING

- Insurer John L. Wortham & Son is **downsizing from mainframes** to networked PC applications based on Borland's dBase. *Page 59*

ENTERPRISE NETWORKING

- Some organizations are riding the cutting edge with integrated networks that support **E-mail and electronic data interchange**. *Page 65*

LARGE SYSTEMS

- **Cray** tries, for the second time, to crack the general-purpose market with a low-end supercomputer. *Page 75*

APPLICATION DEVELOPMENT

- The OS/2 tools business finally appears to be coming to life — with mixed reaction from users. *Page 85*

MANAGEMENT

- Speakers at **The Society for Information Management**'s annual conference say IS managers must break out of the binds of day-to-day operations to focus on business strategies. *Page 95*

IN DEPTH

- Business and information technology managers together can transform the work environment. Here's how to get them to refine and crystallize their thinking. *Page 119*

CAREERS

- If you've got a degree, work in sales, finance or a creative department and enjoy computers, you could qualify as a technical trainer. *Page 127*

MARKETPLACE

- Client/server security management tools fall short for enterprise environments, leaving users to mix and match. *Page 137*

COMMENTARY

- **Charles Babcock** says that if the supercomputer makers can hang on long enough, demand for their products will go up. *Page 6*
- Despite the public's demand for knowledge of such threats as sex offenders and doctors sued repeatedly for malpractice, self-serving groups have successfully quashed the availability of this information, **Bill Laberis** says. *Page 36*
- Virtual workplaces aren't all they're cracked up to be, **Ellis Booker** says. *Page 37*
- Gear up for the upcoming battles between information services and content providers on the Internet, **Esther Dyson** predicts. *Page 37*
- IS managers need a way to test designs before taking them on-line, say **Roger T. Sobkowiak** and **Ronald E. LeBleu**. *Page 41*

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Executive Briefing

Unix users focused on the nitty-gritty issues of building and maintaining production open systems applications at Unix Expo last week. As more users' pilot projects go into production, new worries about network and systems management, daily operations and securityhave arisen. In the meantime, behind-the-scenes activity at some of Wall Street's major financial houses preceded the buzz about security. *Pages 1 and 14*

After seven years at ITT Hartford, Jack Crawford knows what it takes to successfully manage IS/user teams: involve business users in IS decisions, give teams authority over staffing, training and accountability and make sure you have consensus on all IS investments. *Page 95*

Mainframe users clamored for lower software costs at a Gartner Group conference last week, and Legent may have started the ball rolling by coincidentally announcing pricing changes that could give breaks to some customers. *Page 10*

IS shops may be turning to the Internet to get support from their vendors. Dell Computer is the latest desktop vendor to offer service and support via the Internet, and IBM reportedly is preparing a beta-test program for customer support, including remote diagnostics. *Pages 4 and 45*

Job opportunities are likely to open when companies implement a wide-area network. McCaw Cellular, for example, formed an enterprise network support group, which monitors the WAN 24 hours a day. *Page 126*

The privacy of on-line subscribers has become a hot issue with Congress and the general public; America Online is drawing heat from Congress for selling its subscriber data. *Page 1*

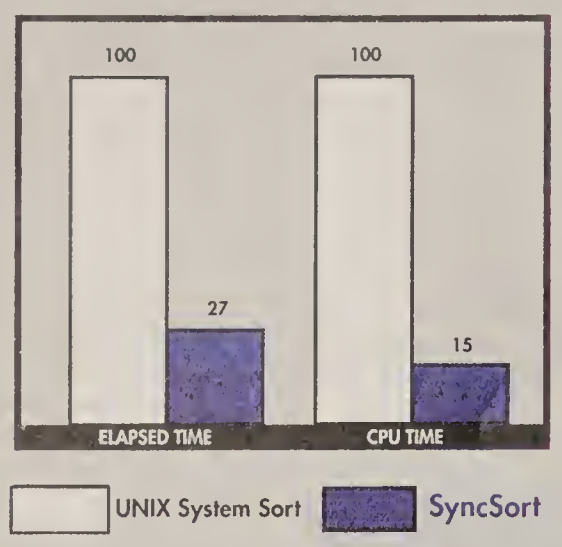
There are still a lot of skeptics, but video game technology may find a fit in business applications. Companies ranging from Taco Bell to Pacific Bell are looking at applications using video game concepts for tasks such as simulation. *Page 24*

Watch out for a growing threat: The use of information systems to attack the same systems. They are both the weapons and the targets of the weapons, according to one observer looking at how an MCI employee allegedly used a network monitoring tool to record calling card numbers and then sold those numbers to software pirates. *Page 1*

The 5th Wave *by* Rich Tennant

The UNIX System Sort

PERFORMANCE



FUNCTIONS

	UNIX System Sort	SyncSort
RECORD FORMATS		
Fixed length binary	NO	**YES**
Variable length binary	NO	**YES**
ASCII Text	YES	**YES**
RECORD PROCESSING		
Selection	NO	**YES**
Reformatting	NO	**YES**
Summarization	NO	**YES**
Grouping	NO	**YES**
COLLATING SEQUENCES		
Standard ASCII	YES	**YES**
EBCDIC	NO	**YES**
User Defined	NO	**YES**
Multi-byte	NO	**YES**

UNIX has its advantages, but its System Sort isn't one of them.

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UNIX

Server suite could squeeze market

Microsoft product linking plans point to another bid for dominance

By Stuart J. Johnston
and Ed Scannell

Microsoft Corp.'s recently announced BackOffice server suite is the first step in an evolution designed to accomplish much tighter integration during the next few years between the company's enterprise building blocks of servers and its operating systems.

In fact, by the time Microsoft's Cairo version of Windows NT arrives in late 1995, the fit may be so tight that a competitor's knife blade will not fit between the blocks.

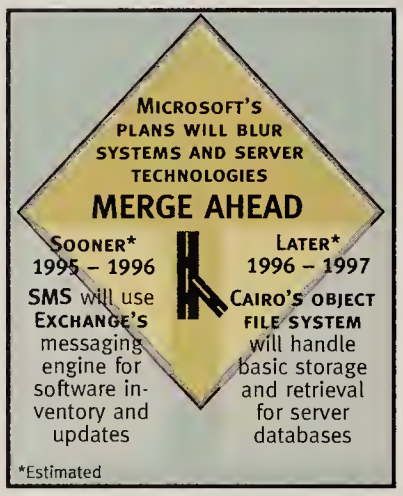
Problems could arise for competitors if Microsoft shares information only with its own developers on how to tightly integrate with the object-oriented Cairo file system, suggested Warren Smith, a certified public accountant and certified information systems auditor in Pacific Bell's auditing department.

If Microsoft puts shortcuts into Cairo that turn out to be better than the industry standard implementation of Cairo, Smith said the situation could be a return to the days when other third-party vendors complained about Microsoft using application programming interfaces "that no one else knew about in some of their applications."

At least one other observer agreed.

"All of this is an inevitability," predicted Jerry Schneider, president of Schneider Associates, Inc., a consultancy in Burke, Va., and former president of the Capitol PC User Group. "The [operating system] is always going to be getting more and more aggressive. No one is safe anymore."

The very thought may further unhinge competitors, some of which are still smarting from the recent Justice Department antitrust settlement with Microsoft. However, many large users do not appear concerned. In fact, some said they welcome a model along the lines of the old IBM that positions Microsoft as the new empire builder.



"Where Microsoft is at right now reminds me of where IBM was in the 1970s and 1980s, [and] if it continues to do things right, the users will benefit," said Scott Piper, a network analyst at Public Service Co. of Colorado in Denver.

"Generally, I don't find Microsoft's proprietary elements to be an impediment, [and] by making life simpler, it's going to be positive," said Colin Carpi, president and founder of Chartwell Advisory Services, Inc. in Penn Valley, Pa., which is developing a large on-line financial services system.

"Big is usually good [for users] because if you're going to have things work, then you [must] have standards, and that takes one [dominant] company," said Briscoe Stephens, coordinator for space sciences in the Advanced Scientific Information Systems Group at NASA in Huntsville, Ala.

Enhancing that vision of dominance are recent acknowledgments by Microsoft officials that over time, the line between server applications and systems software will begin to blur. The first step will be to provide tighter integration among the components in Microsoft's recently announced BackOffice server suite.

A major jumping-off point will come, however, when Microsoft ships the next major release of Windows NT, code-named Cairo, which will include a new file system that will store information as objects instead of files.

Total control

Cairo's Object File System will provide many core functions that users currently think of as database functions — functions that can become part of a standard computing architecture that Microsoft controls from top to bottom. Cairo is scheduled to ship late next year, but many analysts and industry observers said they do not believe it will be out until 1996, at the earliest.

By the time the entire strategy unfolds, users may depend on Microsoft for virtually all their computing needs, which Amy Wohl, editor of the "TrendsLetter" industry newsletter in Narberth, Pa., suggests may not be a good thing.

"Microsoft is becoming [like] IBM, [and] the downside [for users] is the more they do that, the less open they're going to be [so that] it becomes harder to swap in your favorite database," Wohl said.

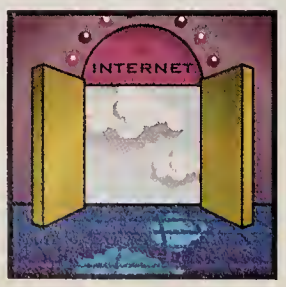
Microsoft officials deny their plans will make their systems more closed. Many users agree, arguing that competitors will always be able to come up with innovative products to help keep the systems open.

IBM, Microsoft bring support to Internet

By Ed Scannell
and Stuart J. Johnston

IBM will begin beta-testing late this year or early next a unique service for supporting corporate customers over the Internet — including the ability to remotely diagnose software problems.

Users experiencing technical difficulties would be able to call IBM technicians who could "look into" a user's machine from a remote site and identify the user's software and hardware. Technicians would be able to run diagnostic tests to find the problem and even download a fix to the user.



"What is interesting here about this is using the Internet instead of using a modem-to-modem connection. It makes the best use of existing connections and saves [information systems] groups time and money," said Bob Holmes, senior technical consultant at Southern California Gas Co.

The service is part of IBM's effort to establish better support, as well as encourage some much-needed communication with users and developers.

However, some observers worry about the reliability of communications lines. For instance, if a software upgrade going over the Internet hits a spike in the line, it may not be operational by the time it reaches the target machine.

One observer said he saw users moving in such direction as a matter of necessity but suggested the implementation may be a way off given the level of reliability found in communications lines.

In a related move, at this week's announcement of OS/2 V3, IBM will highlight the new version's built-in Internet capabilities, which let corporate users flexibly surf through a host of IBM software forums and services. Users can simultaneously explore IBM's Super Information Highway, which contains a wide variety of IBM user and developer software forums; surf through informational databases such as Gopher and Telnet; and download an update to CompuServe.

"The idea is to have [OS/2 V3] be a user's window into the entire company [IBM]," said Wally Casey, vice president of marketing at IBM's Personal Software Products group.

A Marvel-ous service

Similarly, Microsoft Corp. will reportedly offer sometime next year its own on-line service, code-named Marvel, and may bundle clients for it into Windows 95. Microsoft will not officially comment on Marvel, but it may be used to offer technical product support, an internal source said.

"You should think of [Marvel] as an umbilical [cord] back to Microsoft for product distribution, technical support and to communicate with our customers," the source said.

The prospect of Marvel may be one important component of a strategy that seeks to more effectively support enterprise customers while holding down costs. "Microsoft needs to figure out ways to provide support that use technology in a clever way instead of becoming heavy with expensive people," said Amy Wohl, editor of the industry newsletter "TrendsLetter" in Narberth, Pa.

Super call waiting

In fact, Windows 95, due in the first half of next year, will include another feature designed to facilitate user support: VoiceView from Radish Communications Systems, Inc., a switched protocol that allows two enabled modems to put the voice portion of a call on hold to transfer data and then switch back to the voice call, or vice versa. A wide range of modem vendors have announced they will support VoiceView, which is similar to IBM's Internet-based remote diagnostic service.

Marvel will eventually support VoiceView, a source close to Microsoft said.

"Say that I'm sitting there in the middle of a Marvel session and I want to talk to somebody. I can [click on an icon] and bang, I'm talking to somebody," the Microsoft source said. However, features that work with VoiceView are unlikely to be in the first release of Marvel, the source added.

One possibility is that Microsoft will bundle in client software for Marvel when it ships Windows 95. With 60 million-plus units of Windows already in users' hands that could give Microsoft a high user subscription rate to Marvel.

Corrections

A story in the Sept. 26 issue, "Sybase abandons repository product," contained a misleading headline and first sentence. Although Sybase, Inc. does not plan to ship a monolithic development repository as it originally described in August 1993, the company has promised to ship a scaled-down version sometime in 1995.

Also in the Sept. 26 issue, the story "Pictures tell the story to Atlanta doctors" said that AT&T Corp.'s Picasso product requires T1 telephone lines. While the specific application in the story runs over T1 lines, Picasso can be used over standard analog lines. Also, the Food and Drug Administration has not yet approved Picasso.

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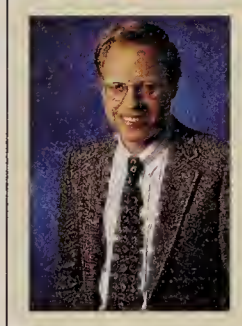
Supercomputing has new purpose

Seymour Cray started out designing supercomputers in a Minneapolis warehouse filled with giant rolls of newsprint. As he worked into the night in this rough setting, the piled up rolls of paper would shift and creak, making him wonder whether a sudden avalanche would end his project, not to mention his career.

Today, the makers of supercomputers and massively parallel processors — including Cray's fledgling Cray Computer Corp. in Colorado Springs — are caught in a perilous shift of circumstance. The end of the Cold War means their traditional sources of funding have dried up. Defense spending has been cut. National laboratories no longer order new supercomputers and build buildings in which to put them.

But at the same time, a new set of demands is springing up that makes supercomputers and massively parallel processors much needed resources. The information superhighway is not a figment of the imagination. The foundation for it is rapidly being laid in the excess fiber-optic capacity that is being installed across the country, but that carrying capacity will need to be matched by traffic-directing and load-movement processors.

The Meta View



Big-iron builders are on the horns of a dilemma, with their very survival at stake.

Charles Babcock

In addition, commercial use of supercomputing and parallel processing is growing day by day. We need supercomputers to help us peer into the inner workings of molecular reactions, where more and more of our drugs, agricultural chemicals and industrial materials are conceived. In addition, Wall Street has begun using supercomputers for on-line stock analysis and quick trading response, and Chrysler recently ordered a Cray Research superserver for automobile design.

So the builders of big iron are suspended on the horns of a dilemma. If they can hang on long enough, the demand for their services will go up. But in the meantime, some will go bust. One of the most ambitious seekers of high performance, Thinking Machines, found its pell-mell pursuit of a teraflop (1 trillion floating-point operations per second) led only to bankruptcy.

Kendall Square Research, whose stock was recently trading just above zero at one-eighth per share, has reorganized under new management. Cray Computer is looking for an investment partner. And MasPar Computer recently needed cash from investors.

Although it's not clear if all these players can survive while waiting for a shift to commercial processing, it is very clear that some *must* survive as a national resource that contributes to the long-term competitiveness of our industry.

In checking with the national supercomputing centers in Pittsburgh, Urbana, Ill., Ithaca, N.Y., and San Diego, it's evident the shift is under way.

"Nine years ago, industry was very naive about what the tools were — what is a supercomputer, what is visualization," notes John Stevenson, associate director at the University of Illinois site. Today, Caterpillar models new equipment on the center's Cray YMP and Thinking Machines CM5. FMC Corp. explores new agricultural chemicals. Dow Chemical, Eli Lilly, AT&T, Motorola, United Technologies, Eastman Kodak and other companies use the facility for research simulations.

At the Pittsburgh center, research by John Rosenberg is leading to new insights into how proteins attach themselves to a DNA molecule, with obvious implications for genetic engineering. Another project simulates the function of hemoglobin proteins in blood in an effort to bring us closer to an artificial blood compound.

These and other applications are key to advances in health care, product design and molecular modeling. In the near future, product designs and on-line information analyses and distribution will all be described with the same phrase: supercomputing.

Babcock is *Computerworld*'s technical editor. His MCI Mail address is 575-2737.

Lotus to unveil CC:Mail tools; hints at partnership with HP

By Lynda Radosevich

Hoping to address the jarring shortage of message management tools, Lotus Development Corp. plans this week to unveil a graphical systems monitoring and management package for CC:Mail, according to users and analysts briefed by the company.

Question of price

Pricing for CC:MailView was unavailable. However, CC:MailView competitor Baranof Software's MailCheck costs roughly $1.50 to $3 per user, according to David Ferris, editor of the "Ferris E-mail Analyzer."

Separately, Lotus President Jim Manzi last week said the company will announce a partnership with a major systems management vendor in the next few weeks and deliver a joint Notes management product at the first of the year. Another Lotus source confirmed that Hewlett-Packard Co. is the new partner.

The CC:Mail tool, called CC:MailView, is meant to address large CC:Mail sites' long-standing need to centrally manage wide-area messaging networks. Users and analysts briefed on it said it is key for companies that increasingly rely on messaging for business-critical communications. Lotus had no comment on the announcement.

"This is a welcome tool," said Walter Alvarado, a senior information systems analyst at Disney Worldwide Services, Inc. in Burbank, Calif. CC:Mail was originally built to work on LANs, and as Disney built wide-area CC:Mail messaging networks, the ability to manage them was missing, he added.

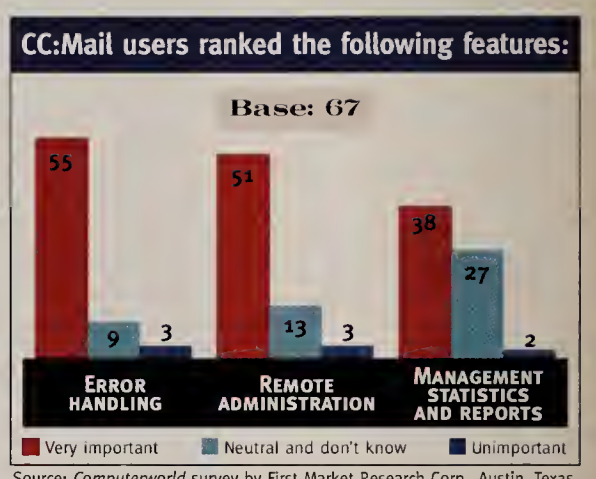
CC:MailView includes a graphical user interface on a central monitor that displays a map of the global messaging network. It allows users to "drill" down to specific CC:Mail post offices by clicking on icons, analysts said.

Also, it will provide statistics on CC:Mail gateway performance, post office errors, session logs and management.

"It's absolutely mandatory for users with a distributed E-mail system, whether it's CC:Mail, SMTP [Simple Messaging Transport Protocol] or X.400, to have the ability to do central management," said David Ferris, editor of the "Ferris E-mail Analyzer" in San Francisco. Today's options are limited, he added.

Products on the market include Baranof Software's MailCheck and the Lotus SoftSwitch division's Electronic Messaging Monitor (EMM). However, MailCheck does not provide centralized management, and EMM requires users to have SoftSwitch's expensive ($25,000 to $300,000) messaging switch.

CC:MailView does not support the Simple Network Management Protocol but is likely to after Lotus, Microsoft Corp. and others agree on a management information base standard called Madman, sources said. Pricing was not available, but one analyst said $300 for a post office, which serves 100 to 200 users, is a fair price.



Source: *Computerworld* survey by First Market Research Corp., Austin, Texas

Meanwhile, Manzi also said Lotus is in partnership discussions with IBM to link the Notes management software NotesView and NetView/6000.

Senior editor William Brandel contributed to this story.

E-mail/EDI networks relatively rare. See page 65.

Internet name game gets specific

By Mitch Betts

■ An arbitration panel brought a tiny bit of order to the anarchy of the Internet last week by settling one of several disputes over who can use a company name in an Internet address.

Arbitrators ruled that Princeton Review, Inc. must relinquish the Internet domain name of "kaplan.com" to Kaplan Education Centers, a test preparation subsidiary of the Washington Post Co. Princeton Review registered the Kaplan name as a way to annoy its archrival.

"They hijacked our name for four months," said Jonathan Grayer, president of Kaplan in New York. "It was like a second-grade prank." Kaplan argued that its rival's move was "trademark infringement and constituted unfair competition."

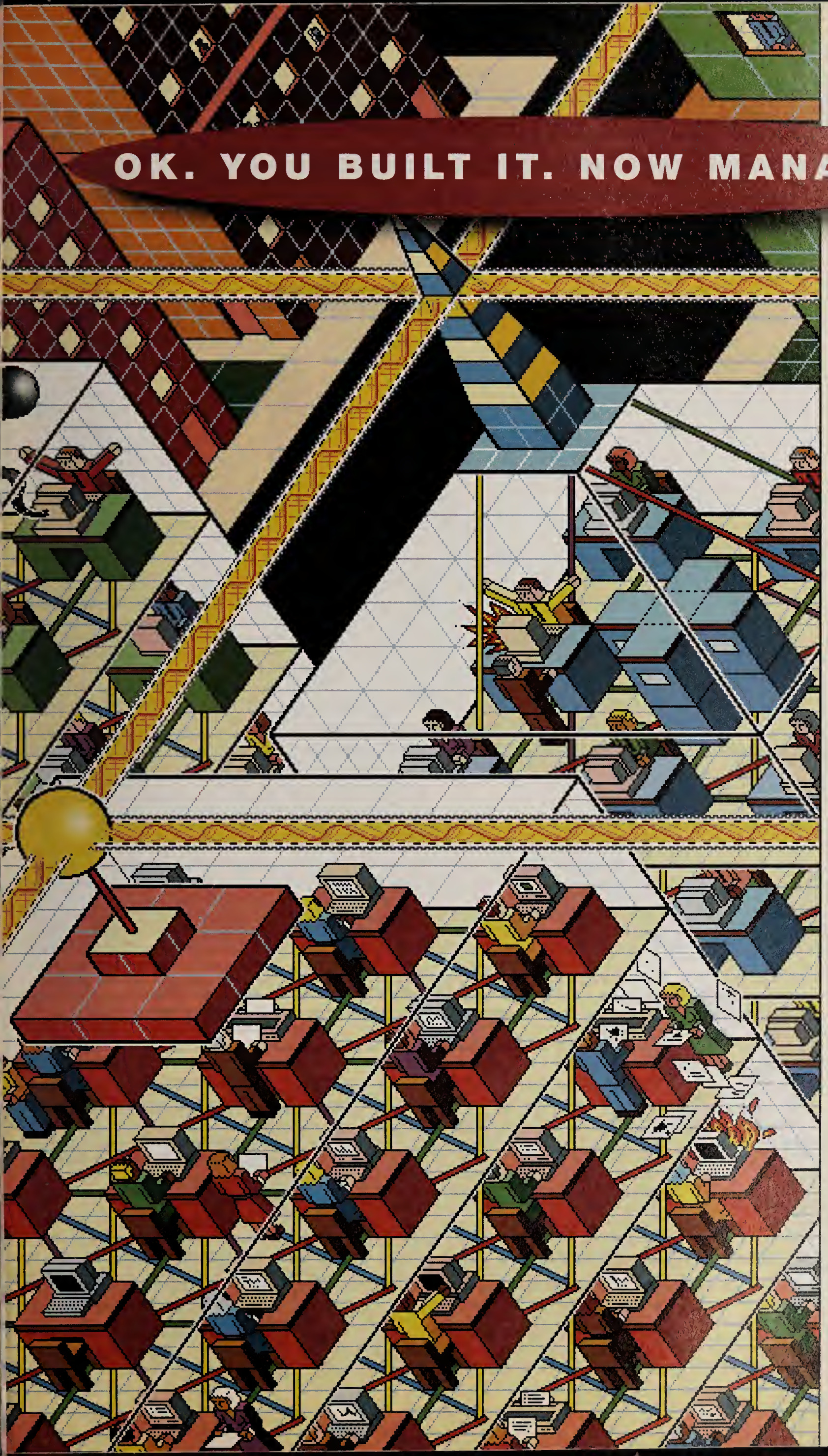
Domain registrations are assigned on a first-come, first-served basis by a handful of volunteers at Internic Registration Services, which is run by government contractor Network Solutions, Inc. in Herndon, Va.

As companies scramble to get on the Internet, some are finding that individuals or obscure businesses have already registered such well-known names as abc.com, fox.com, coke.com and mcdonalds.com.

The overwhelming business demand for domain names has forced the quasi-official Internic to limit domains to one per company. But the registry stays out of name-poaching disputes, leaving those to corporate lawyers.

No name precedent

This will be a big problem for companies that use similar names or abbreviations, said Janice B. Stanton, media and intellectual property counsel at Dow Jones & Co. in New York. At a recent conference regarding on-line legal issues, she said there is no clear precedent on whether company trademarks are viable in cyberspace.



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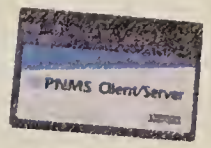

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News Shorts

NASDAQ hit by big iron failure

A mainframe processor failure at the **NASDAQ Stock Exchange, Inc.**'s Trumbull, Conn., data center suspended NASDAQ's Small Order Execution System for about 15 minutes last week, preventing stock prices from being quoted. Trading on the NASDAQ was unaffected by the failure of a Unisys Corp. 1100/90 processor. NASDAQ technicians were able to replace the processor with a spare CPU and bring the system back up within a few minutes.

Quick, get the word out

User reaction in the **Apple Computer, Inc.** community to **Microsoft Corp.**'s Word 6.0 has been so negative that Microsoft has set up a special Quick Response team to help frustrated customers figure out why the program sometimes runs so slow. Word 6.0 can get bogged down by thousands of possible combinations of resident "init" programs on 680x0-based Macintoshes, said Microsoft group product manager Don Pickens. The rescue efforts may have been too late to save one customer, Walt Disney Imagineering project director Bruce Gordon, who late last week reported, "I just threw Word in the trash." Microsoft's Word support phone number is (206) 635-7200.

Resellers unite

Corporate Software, Inc. this week will announce it has acquired Richmond, Calif.-based **800-Software, Inc.**, a subsidiary of Digital Equipment Corp. Corporate Software in Norwood, Mass., sells software such as Notes and provides support to corporate sites. 800-Software is a major reseller in government and education markets. Terms of the deal were not disclosed.

Dell reduces prices on Pentium systems

Dell Computer Corp. last week reduced prices on several of its Pentium models by $200 and introduced new sub-$2,000 Pentium desktops aimed at corporate users. Customers can now buy Dell's XPS P60 at a starting price of $1,899 and a 90-MHz version for just under $2,400.

AT&T unveils network management tool

AT&T Corp. last week introduced a three-part network management outsourcing product that ranges from the LAN to the WAN. Enterprise Management Services (ENMS) includes a money-back guarantee if AT&T does not meet performance levels set during a six-month benchmarking period. The WAN and data transport components of ENMS are available today; its LAN management component will be ready in the first half of 1995, AT&T said.

IBM's AS/400 group taps PowerPC

IBM's AS/400 Division introduced its first PowerPC-based computer, which as expected runs the operating system from its old System/36 midrange line rather than OS/400 [CW, July 25]. The model, called the AS/400 Advanced System/36, is being sold in three packaged configurations that start at $12,000. Software as well as hardware is included.

Wellfleet introduces stackable routers

Wellfleet Communications, Inc. last week unveiled a stackable router that observers said should provide users with a more flexible way of connecting LANs at large remote offices and regional sites. Up to four Access Node Stack routers, with up to 24 interfaces, can be included in a stack. Interfaces are available for Ethernet, Token Ring, Fiber Distributed Data Interface and Basic Rate Integrated Service Digital Network. Prices start at $4,000.

Pentium creeps along

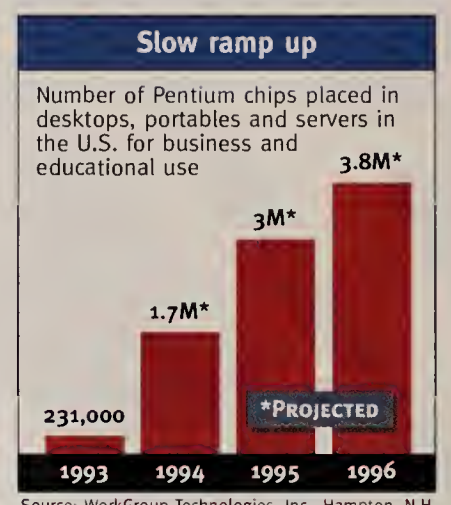
Users reluctant to upgrade despite increasingly lower prices

By Jaikumar Vijayan

The last time the information systems department at Fish and Richardson upgraded its hardware, it dumped its 1486 servers and desktop PCs for Intel Corp. Pentium-based systems that incorporate cutting-edge Peripheral Component Interconnect (PCI) technology.

The verdict at the Boston law firm three months after it adopted the technology is practically no noticeable performance gains on its server platforms but significant gains on the desktop.

"For processor-intensive kinds of applications, switching to Pentium has made a lot of sense for us," said Ken Sacca, network administrator. But as far as storage-intensive server applications are concerned, the results have been somewhat disappointing, he said.



Source: WorkGroup Technologies, Inc., Hampton, N.H.

"Our initial experience suggests that with Pentium costs dropping so fast, it would be a huge waste of money to even consider 486 systems if you are thinking of upgrading your systems now," Sacca said.

Unfortunately for Intel, not nearly enough customers agree, analysts said.

Marketing or muscle?

Intel's hype over the new class of processors and the $100 million-plus marketing blitz of the past few months may have created a false impression about the extent of Pentium's penetration in the marketplace, said Dean McCarron, an analyst at Mercury Research in Scottsdale, Ariz.

Pentium sales in the corporate market may be less than 20% of all Pentium systems sold so far, analysts said. And overall U.S. Pentium sales this year are expected to top out at a disappointing 3.8 million or so, considerably less than earlier estimates of about 5 million units. In fact, several analysts have already begun reducing estimates of Pentium sales despite the fact that the fourth-quarter peak selling season has not begun.

Intel, however, has been holding on to its original estimates. "We are sticking to our 6 million to 7 million target," said Carl Everett, Intel's senior vice president of the microprocessor group. He acknowledged that meeting this goal will be difficult but that "everything's a stretch at Intel."

But according to Randal Giusto, an analyst at BIS Strategic Decisions in Norwell, Mass., with 486 processors meeting almost all desktop performance needs, there is no compelling reason to shift to a faster box. "Most of corporate America is still in the process of replacing their 386 systems with 486 boxes," and the reluctance to shift stems primarily from this, he said.

Even worse, corporate desktop users show little interest in Intel's 60-MHz processor (P60) simply because its performance is already closely matched by DX4 and clock-doubled DX2 chips at a lower price, Giusto said. Higher-performance 90-MHz and 100-MHz processors will have to cost much less to lure users from these processors, he said.

This, according to at least some corporate users, is precisely why upgrading to Pentium-class performance may not be such an attractive option right now. Already, P60 boxes have begun to hit the market at less than $2,000, which compares favorably with similar DX2 and DX4 systems. Pentium 90-MHz and 100-MHz systems could become widely available before the end of the year for less than $3,000.

"If you are looking at some of our applications, we are not even pushing 486 all the way to 50 MHz right now," said Aijaz Nawdhia, a LAN administrator at Burger King, Inc. in Miami. "Based on the software available right now, I don't see the need to upgrade for another two years or so." Windows 95, the upcoming release of Windows, could make a difference, but not until late next year at the earliest, he added.

"The reality is that there has been a skewing in terms of end-user preference. If it's a question of spending $200 or $300 more, users would prefer getting more useful features like CD-ROM support and sound cards," rather than a faster Pentium processor, McCarron said.

Senior editor Michael Fitzgerald contributed to this story.

Dual dealing

AT&T Global Information Solutions will announce two dual-processor Pentium-based servers later this month, according to a source close to the company. The machines are the company's first PCI-based servers. The 3416XL is a high-availability LAN server running at 90 MHz. The 3404 will come in desktop and under-the-desk versions running at 60 MHz or 66 MHz. Both models will ship Nov. 1.

NextGen signs up more Pentium clones. See page 48.

Intel shrinks Pentium size

Pentium has hit the notebook market thanks to a sleek packaging technology that lets Intel sell a chip that is thinner than a dime.

The new 50/75-MHz Pentium chip, to be announced today, weighs less than 1 gram, compared with a desktop Pentium's 55 grams. It will allow vendors to reduce system weight and save precious motherboard space. Tape Carrier Package technology accounts for the small size.

More important to users is the chip's performance. Alex Daly, marketing director at Intel's mobile computing group, released benchmarks that showed the new Pentium chip running twice as fast as a 25/75-MHz DX4 chip.

Daly also said the high end of the notebook market will gradually shift to the 50/75-MHz Pentium beginning in the first quarter of next year, with 33/100-MHz DX4 systems falling into the $2,500 to $4,000 range.

The first notebook based on the new chip, the Toshiba T4900CT from Toshiba America Information Systems, Inc., will be announced today [CW, Sept. 19]. With a 10.4-in. active-matrix color screen and a 770M-byte hard drive, the system will cost $7,499. It is scheduled to ship in late November. NEC Technologies, Inc. also intends to add the chip to its product line in the December time frame.

—Michael Fitzgerald

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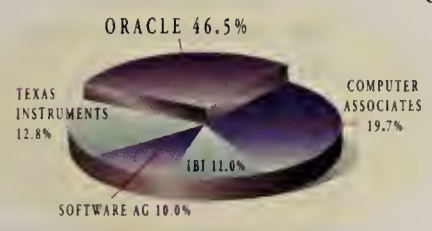

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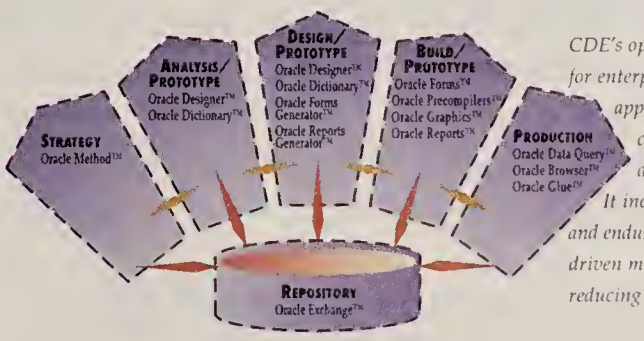

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ORACLE

Legent price scheme follows IBM lead

By Craig Stedman
LAKE BUENA VISTA, FLA.

As mainframe users at a Gartner Group, Inc. conference here clamored for reluctant software vendors to follow IBM's lead in lowering prices, Legent Corp. may have started the ball rolling by coincidentally embracing the capacity-based pricing approach defined by IBM last spring.

Legent said capacity-based prices will generally not be much lower than the traditional tiered license fees on its systems management software. However, the adoption of IBM's service unit ratings will create "some scenarios" where customers could shave their costs by up to 10%, said Mark Wasilko, vice president of corporate marketing at Legent in Herndon, Va.

Service units are a measurement of CPU resource usage that allow for a more linear price curve than the tiered approach. This results in smaller software increases when customers upgrade their mainframes.

Wasilko said Legent will also let shops combine the service unit ratings of multiple machines to qualify for discounts that kick in as capacity levels increase.

Karen Cone, an analyst at Gartner Group in Stamford, Conn., said Legent's move is "a reasonable starting point" that could push other software firms to emulate IBM. "There's been a big game of chicken going on, with all of the vendors waiting to see who would jump first, and Legent just jumped," she said.

And it's about time, said mainframe customers at Gartner's annual Symposium conference. While Legent and other vendors such as Computer Associates International, Inc. have made some well-publicized pricing changes in the past two years, Cone and several users said those moves have not made mainframe software much cheaper — especially compared with Unix databases and other client/server software.

Pacesetters

- Boole & Babbage, Inc. also has promised to implement service-unit pricing this quarter.
- Other pricing changes announced by Legent include an expanded enterprise license program and the bundling of complementary software products at discounts of up to 50% off individual prices.

"IBM is doing a fairly good job of starting to drive down software prices, but from what I've seen, the other vendors have been doing a good job of trying to maintain their software revenue," said William Herrin, manager of the information technology department at Texaco, Inc. in Houston.

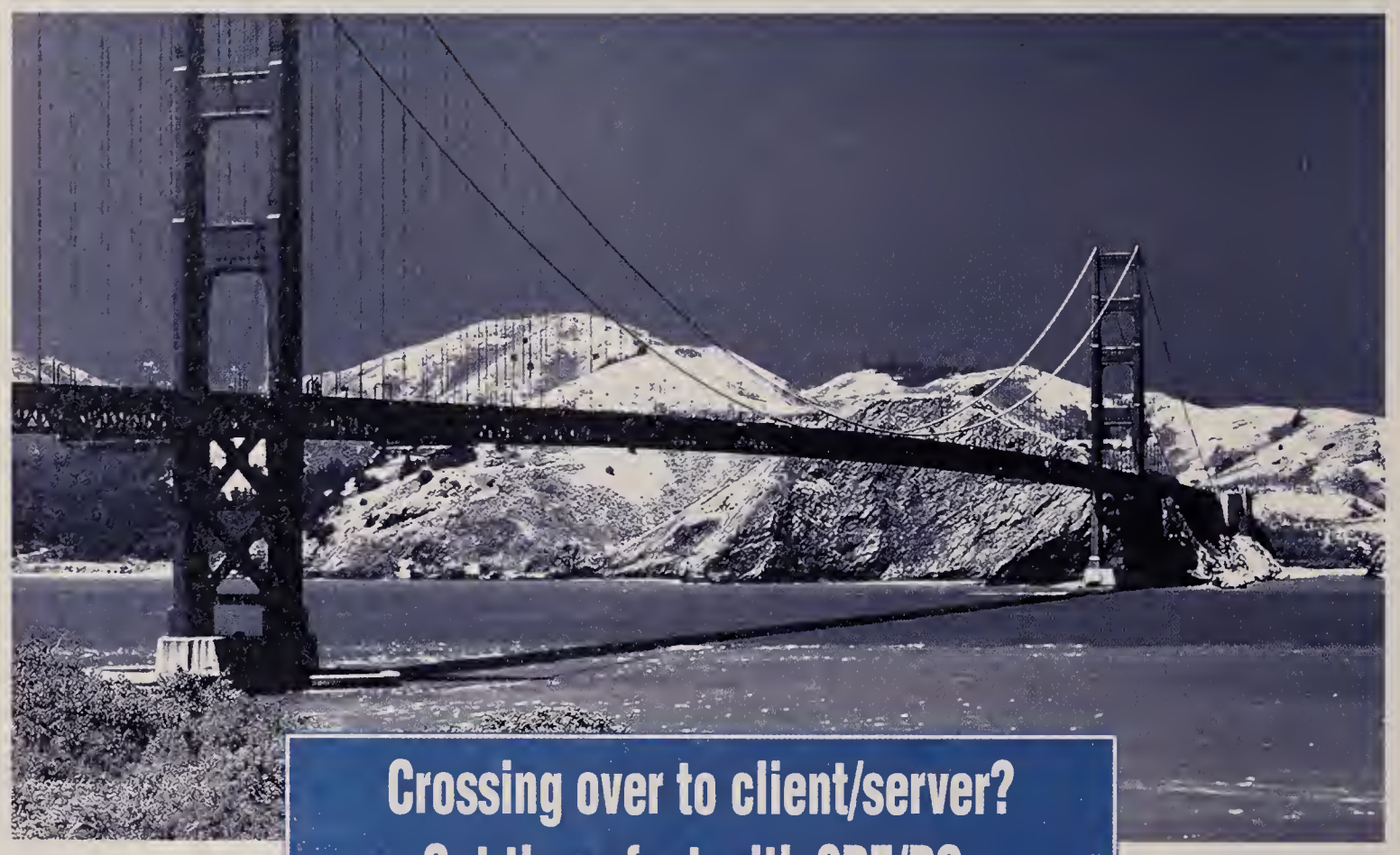
Even though Texaco is using some mainframe software less as it shifts applications to client/server platforms, the monthly fees it pays for the mainframe packages remain as high as ever, Herrin added. "We're paying a lot of money for exceedingly little value or even declining value," he said.

"We want mainframe software vendors to be viable and healthy, but we also need them to be realistic," said another user, who asked not to be identified. Her company recently "threw out all the pricing models and came up with our own" as a basis for renegotiating its software licensing deals. "We felt like we were being gouged," she noted.

Some vendors have been willing to cut informal deals with certain customers, analysts said. Bill Maguire, acting manager of technical support at the U.S. Postal Service in Raleigh, N.C., said the Postal Service negotiated capacity-based deals with Legent and CA that saved almost $700,000 in software costs when a new mainframe was installed last winter.

However, it has been "somewhat of a best-kept secret that these options existed," said Wade Brown, executive vice president and chief information officer at Washington National Insurance Co. in Lincolnshire, Ill.

Hewlett-Packard drops MPX/IE price. See page 75.



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APPN workshop to focus on openness, client/server

By Suruchi Mohan

Long accused of neglecting to educate users about a migration strategy to Advanced Peer-to-Peer Networking (APPN) in the mainframe environment, IBM is expected to make a push for the architecture at the APPN Implementors' Workshop in Raleigh, N.C., this week.

Although IBM did deliver a migration path from SNA to APPN last June — when it announced the Dependent LU Requester and Server — the move comes at a time when users may be considering other options.

"IBM's migration strategy has just recently become clear," said Mike Zavodsky, senior communications systems programmer at United Parcel Service, Inc. in Mahwah, N.J. Zavodsky will present at the workshop an APPN case study on how his organization integrated APPN in a client/server environment. "Before that, there were no clear explanations," he said.

Used so far for peer-to-peer networking in AS/400 environments, the requester/server will let users leverage their legacy SNA applications in an APPN environment.

"We would have been open to it before we started migrating to client/server technology," said one user at a large firm. "If IBM continues to be proprietary, they'll lose."

Charlie Affleck, director of technology at Textron Financial Corp. in Providence, R.I., is rightsizing his company's systems to Unix. "SNA will not be an issue [for us] in 18 months," he said, because all of Textron's mission-critical applications will run on Unix.

Despite these discordant voices, analysts such as Tom Nolle, president of CIMI Corp. in Voorhees, N.J., said APPN is sure to succeed, although current figures may not suggest so.

"The largest growth in APPN network nodes as a percentage of the total number of remote devices will take place in the 1997 time frame," Nolle said. APPN will grow from 5% penetration now to 30% on corporate networks, he said.

Vendors supporting APPN claim its adoption will increase sharply around 1996.

Dave Bryant, director of network engineering at 3Com Corp. in Santa Clara, Calif., said he expects users to start migrating to APPN by mid-1995, with greater activity in 1996. This will coincide with the coming-out party for high-performance routing (HPR), an enhancement to APPN whose biggest virtue is an ability to do dynamic rerouting around a failed link. At the workshop, HPR will graduate to the next step in the approval process, meaning vendors can start building products around the specs, which should not change much after this stage.

Green light for switching

Additionally, Data Link Switching (DLSw), the routing of encapsulated SNA traffic over TCP/IP, will reach its first level of approval as a standard. Lori Dreher, a senior produet manager at Wellfleet Communications, Inc. in Billerica, Mass., who has worked on the specifications, said she expects DLSw to reach the second level of approval too. That means users will be able to get their hands on products with DLSw eapabilities by the end of 1995.

Brian Spears, manager of information systems at Konica Business Machines in Windsor, Conn., said he thinks DLSw will help his company "utilize lower bandwidth links on the WAN, reducing excess traffie associated with SNA and NetBIOS."

Mobile users get help from phone assistant

By Michael Fitzgerald

Start-up Wildfire Communications, Inc. last week unveiled its Electronic Assistant, a software program that filters and manages telephone calls — much like a secretary would.

Electronic Assistant also gives users reminders and maintains a contact list. It integrates voice recognition software from Voice Processing Corp. and runs on an off-the-shelf Pentium server made by Intel Corp.

> **Electronic Assistant is "clearly a breakthrough technologywise. ... It's better than the voice-mail jail we're used to now."**
> — Robert Womack, Hale and Dorr

The product draws users along a simple palette of voice commands. For instance, when a caller asks for a person who is not available, the Wildfire system tells the caller the person is not there and asks to take a message.

"It's designed to be a productivity tool for mobile professionals," said Nicholas D'arbeloff, cofounder and vice president of the Lexington, Mass.-based vendor. He cited as one of Wildfire's salient features its ability to let users efficiently deal with phone calls and voice mail when using pay phones.

Beta users and analysts gave the technology glowing reviews.

"It's clearly a breakthrough technologywise.... It's better than the voice-mail jail we're used to now," said Robert Womack, director of computer services at Hale and Dorr, a large Boston law firm that has been testing Wildfire since March. "If you have professional staff that are out of the office continually, this can help an organization trying to work together more effectively and as teams. This is a neat set of technologies."

Great potential

Womack compared Wildfire's potential impact on highly mobile workers to Lotus Development Corp.'s Notes for collaborative teams or Unix servers for downsizing. Senior partner Hal Leibowitz added that he "cut off telephone tag" with Wildfire.

The product is not cheap, however. A four-port box that supports 12 to 24 users costs $46,850, and an eight-port unit for 24 to 48 users costs $69,900. Wildfire officials said this averages out to less than $2,000 per user, or roughly the cost of a mainstream notebook computer. The Electronic Assistant also requires a dedicated T1 line to connect to the public telephone network.

Toll fraud

CONTINUED FROM PAGE 1

ton, was arrested last month for stealing some 40,000 card numbers.

"It's brilliant — using a crime to commit a crime," said Winn Schwartau, executive director at Interpact, Inc., a computer security consulting firm in Seminole, Fla. "You'll be seeing more of this. The information systems themselves are what's under attack. They are both the weapons and the targets of the weapons at the same time."

MCI said Lay's scheme involved network "sniffer" software programs on the switches at the Greensboro, N.C., station where he worked. The sniffer scanned for and captured numbers from thousands of calls sent through the center daily.

What would A. G. Bell say?

"Telephone fraud is the handmaiden to network penetration," said John Haugh, chairman of Telecommunications Advisors, Inc. in Portland, Ore. Haugh said the MCI case proved that such crimes are a two-step process, involving both the theft of a calling-eard number and its use to attempt to crack corporate data resources.

Automated fraud detection systems at MCI, as well as AT&T Corp., Sprint Corp. and GTE Corp., began to reveal a pattern of abuse earlier this year. For years, the carriers have exchanged information on fraud investigations.

Crime watch

Some warning signs of fraudulent telephone activities:

- Long delays and holding times
- Unexpected increase in usage
- Unusual usage off-hours
- Crank or obscene calls
- Hang-up calls
- Peculiar requests by telephone
- Calls to unusual locations and numbers
- Increased international calls
- Unexplained 900-number calls
- Unusually high credit-card call activity

Source: Computer Security Institute, San Francisco

"From the beginning, because of the high number of cards, it was reasonable to assume it was an in-house job," said an MCI spokeswoman. She said Lay was transferred in April, and in May, a task force representing MCI and other carriers was formed. At this point, the U.S. Secret Service become involved in the case.

Just like telecommunications companies, credit-card firms are busy building increasingly accurate fraud detection systems.

Caught in the act

According to David Medeiros, a researeh analyst at The Tower Group in Wellesley, Mass., the next phase for these systems will be real-time capabilities — the ability to spot a fraudulent transaction as it happens.

But "trying to get to a system to block the transaction at the register" requires huge computational resources, Medeiros said. The existing systems, some of which use neural network technology to build an historical, predictive model of an individual's charging behavior, are mostly report-oriented. The crime is detected, but only after the fact.

Mastercard International, Inc., for one, hopes to add just such a real-time aspect to its family of fraud detection systems within a year, according to a company spokeswoman. Meanwhile, many companies say nothing and do little about the pirating of their long-distance lines. One Fortune 500 company takes a tax loss of $65,000 each month for toll fraud, Milligan said.

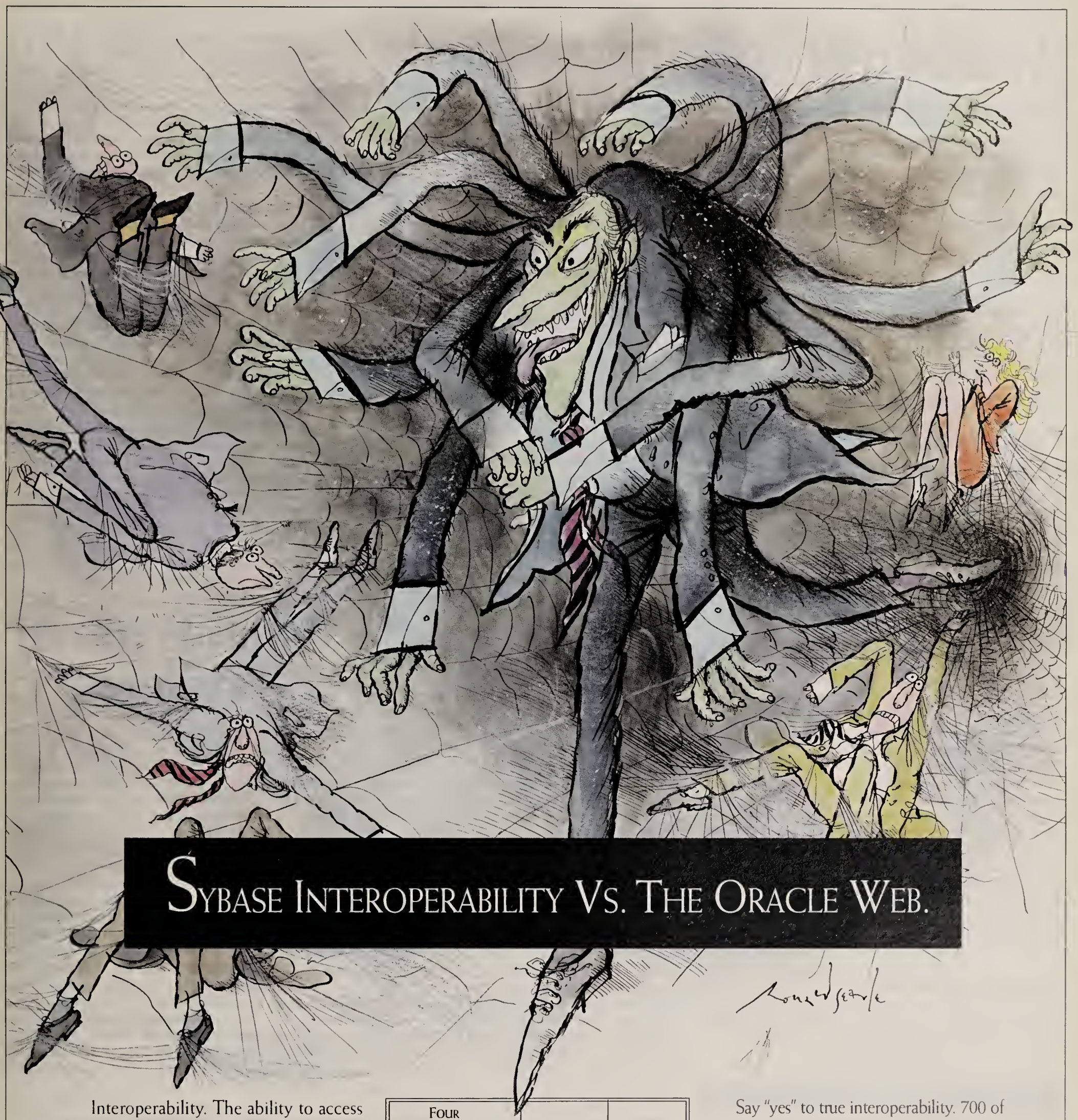
He said he advises businesses not to rely on the telephone companies to look out for their interests. "The local telephone companies get up to 27 cents out of the dollar for each long-distance call, with or without fraud," Milligan said. "So they have very little incentive to stop it."

Scrutinize your bill

But sometimes companies are unknowing victims because fraudulent calls are hidden in telephone bills that are not reviewed carefully, said Richard Miluski, a voice communications security specialist at the National Computer Security Association in Carlisle, Pa.

Miluski said the cost of toll fraud — traditionally borne mostly by the carriers — is increasingly being shifted to large corporations that buy their own telephone systems and set up their own networks.

Senior editor Allan E. Alter contributed to this report.



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Wall Street demands security

Brokers appeal to Sybase, Sun

By Thomas Hoffman

Long before Unix zealots began buzzing around last week's Unix Expo trade show, other significant activity was occurring behind the scenes at some of Wall Street's major financial houses. Information systems executives were busy examining one of their most pressing problems: major security gaffes in the Unix operating environment.

"If you look at the mainframe environment, security is integrated throughout the systems," said Jonathan Vaughan, vice president of corporate information technology services at The Chase Manhattan Bank NA in New York. "While there are third-party products that address some of that in Unix, what you'd like to see ideally is having security integrated in with the operating system."

To further that goal, members of the Securities Industry Association (SIA) created two subeommittees last spring to meet with Sybase, Ine. and Sun Microsystems, Inc. Those vendors were singled out because their systems are the most widely used in the securities industry — not because their Unix environments are any more problematic than others, SIA members noted.

"As more critical applications are being moved to a Sybase/Unix environment, the issues have become more prevalent. The potential for security breaches is there," said William Geller, an associate in the Corporate Information Risk group at J. P. Morgan & Co. in New York. He is also chairman of the Sybase security committee.

The SIA committees are still in the early stages of making recommendations to the vendors. Still, input from the Sybase group has already prompted the database vendor to outline security features that will be added to future releases.

Jonathan Vaughan: *Wants mainframe-type security for Unix*

Broad impact

The Sybase group has met several times since March with the database vendor to discuss security issues such as user authentication, validation and access control. Although Sybase offers an add-on auditing product to its relational database management system, called Audit Server, Geller said the SIA group has asked Sybase to improve the product's performance. Audit Server "provides a lot of functionality, but we're looking for improved response times with the product," Geller said.

The Sybase user committee on Wall Street sent a position paper to the Emeryville, Calif., database vendor, which in turn has issued a white paper on its projected security developments for future releases. While the Sybase white paper is available only through the SIA to security officers at Wall Street firms who sign nondisclosure agreements, Sybase's actions will impaet users in other industries, according to Tayo Ibikunle, senior manager of strategic technologies at Sybase.

Ibikunle said Sybase has been developing network-based security features for encryption and authentication portions of the Open Software Foundation's Distributed Computing Environment standard. Sybase will roll out these and other new security features beginning with the shipment of the next version of Sybase SQL Server in the second half of next year.

A tough add

Although members of the Sun committee would not discuss its progress, one anonymous committee member said the group concluded that Sun's hardware makes it difficult for users to add third-party security packages.

Eric Schmidt, Sun's chief technology officer, said Unix systems are just as secure as mainframe environments when configured properly. "Unix users, in general, have not configured these systems in a secure way," said Schmidt, who added that Sun has pushed up efforts to train users on network administration.

Some users, such as Vaughan, continue to request mainframe-type security capabilities built into Unix. Others contend that Unix vendors need to approach their customers differently.

"Vendors ought to ship their systems secure and allow the people who install it to provide access to users later on instead of the other way around," said Stephen T. Kent, a noted security expert and chief scientist for security technology at Bolt, Beranek and Newman, Inc., a networking vendor in Cambridge, Mass.

Unix camp deals with host envy

CONTINUED FROM PAGE 1

complied, trotting out new utility packages at the show that echoed those formerly available only on mainframes and minicomputers.

For example, Bull Worldwide Information Systems is providing its Integrated System Management (ISM) software for Tandem Computers, Inc.'s Integrity Unix servers. A small Israeli firm called Memco Software Ltd. is providing security for Unix servers similar to that in IBM's Resource Access Control Facility mainframe security system.

Wanted: Mainframe ease

"Security is a big issue, and we need a lot more management tools, like tools for backup and recovery," said John Eggleston, a software analyst at Woolworth Corp. in Milwaukee. Eggleston said the software tools for mainframes are integrated and easy to use compared with a patchwork of independent modules that users have to glue together. "Why don't they offer the same things they do on the mainframe?" he asked.

Users also said they need more powerful servers as applications on open systems grow in size and relational databases demand more system resources.

Holding back

IBM, Motorola, Inc.'s Computer Group and Bull each showed off new PowerPC-based servers. But users were quick to note they are more likely to hold on to software environments than quick-changing hardware platforms, especially in the face of high retraining and development costs.

"I'm looking at the best performing processors for staffers to do their work," said James Kaylor, a network analyst at Pennsylvania State University's Center for Biostatistics in Hershey, Pa.

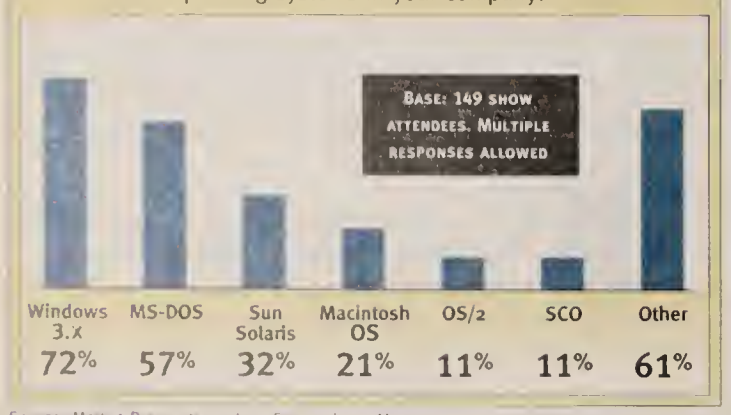
Users said they will simply press on while vendors hash out how to incorporate the standards. "I have to be aware of the standards, but only when I'm putting a technical team together," said Joseph Chizmarik, a consultant in Chatham, N.J., who works on open systems projects. "At a high level, I only need to know they exist."

Up and coming

In a recent survey at Unix Expo in New York, 149 attendees were asked to list the Top 3 desktop operating systems in their companies today and the Top 3 likely in 1996. Five percent of the respondents listed Windows 95 today, while 40% listed Windows 95 as likely to be among their top operating systems in 1996.

And these are fans?

Unix Expo attendees were asked, "What are the Top 3 desktop operating systems in your company?"



Source: Market Perspectives, Inc., Framingham, Mass.

IBM, Motorola unveil PowerPC systems

By Jean S. Bozman
NEW YORK

Two major brands of PowerPC systems made their debut at Unix Expo last week. They came in the form of IBM's symmetrical multiprocessing RS/6000 servers and Motorola, Inc.'s PowerStack line, which will initially run only IBM's AIX Unix.

But users and analysts agreed the PowerPC systems will need a variety of operating systems, starting with Microsoft Corp.'s Windows NT, to make headway against tens of millions of Intel Corp.-based systems.

Some users at Unix Expo said they were dissatisfied with IBM's short list of choices. OS/2 for PowerPC, for example, is not due to ship until next June, analysts said. IBM officials noted that AIX is appropriate for a high-end server, while the company's Power Personal Division desktops will support other software choices. Windows NT is due to ship on PowerPC in November.

But users said they are already looking for alternatives to IBM's AIX on PowerPC. "We're looking at using NT on the PowerPC," said one Wall Street user who did not wish to be named. That will provide a growth path for Windows applications as well as a high-end server for financial trading applications, he said.

Vendors may be thinking the same thing. Porting NT applications from Intel to PowerPC platforms may take less effort than porting Unix variants, said Matthew Jacobson, a New Jersey director at Data Focus, Inc. in Fairfax, Va., a vendor that converts Unix applications to NT with its Nutcracker tool suite. "Our ports from Intel to the Alpha and Mips RISC chips were done in days," he said. "Microsoft's promise of source compatibility across chip sets is real."

Motorola's Computer Group announced last week that AIX would be the first — but not the only — operating system on its PowerPC 603 and 604 systems when they ship this fall. Edward Staiano, general manager of the Motorola Computer Group, said he is negotiating with Sun Microsystems, Inc. and Novell, Inc. to run their operating systems on PowerStack units.

Users' buying decisions will be easier once multiple operating systems are available on the PowerPC platform, industry analysts said. "You can choose an [operating system] and then pick any hardware you want," said Tony Iams, a research analyst at D. H. Brown Associates, Inc. in Port Chester, N.Y.

IBM sketches in details of object strategy

By Melinda-Carol Ballou
NEW YORK

IBM broadcast an unexpectedly coherent message at Unix Expo last week about its object strategy and how it expects to unite its operating systems using System Object Model (SOM) and Distributed SOM (DSOM), industry analysts and developers said.

IBM officials touted SOM as the means to distribute objects across operating systems, saying it will neutralize the disparities across operating environments for users. The computer giant provided ship dates for AIX object-related products and a range of tools for MVS, OS/2 and the AS/400 [CW, Sept. 5].

IBM is already shipping SOM and DSOM on AIX and OS/2. SOM is available on MVS now, and DSOM will be available on MVS late next year, according to IBM officials.

SOM/DSOM allows the portability of objects across platforms and development languages and is platform-independent and language-neutral, IBM officials said.

Product rollout

IBM announced the following tools last week:

- SOMobjects Toolkit support for MVS and the AS/400.
- C, C++ and object-oriented Cobol for MVS.
- VisualAge development tools for AS/400.
- Early availability of Taligent on AIX as well as SOM support in AIX 4.1.
- IBM Smalltalk and VisualAge upgrades for OS/2 and Windows.

SOM is IBM's implementation of the Object Management Group's Common Object Request Broker Architecture (CORBA), an emerging standard for allowing objects to communicate with one another. SOM also supports the Open Software Foundation's Distributed Computing Environment and communications standards such as TCP/IP, NetBIOS, IPX and SNA.

The SOMobjects Developers Toolkit lets users create objects in one language, such as C++, and access them transparently from another, such as Smalltalk, officials said.

User advantages

An IBM strategy using SOM across operating systems could be "very interesting," said Noel Yap, a programmer/analyst at Zainet Software, Inc., a New York developer of commodities software. "It would allow our applications to be more easily cross-platform" while offering object-oriented advantages, he said. Yap's organization, which must support applications across mixed mainframe and Unix environments, is currently considering various implementations of CORBA.

All-IBM shops wanting to effectively deploy client/server applications have been waiting a long time for last week's announcements. Most were not disappointed.

"IBM is the only company right now that has the technical resources and know-how to deploy objects across MVS, the AS/400 and OS/2. Microsoft is strong on the desktop, but they can't give us what we need," said C. K. Wong, senior systems analyst at Bank of Montreal.

While lauding IBM's plans, industry analysts said the vendor must also support non-IBM operating systems if it is to compete effectively against the ubiquity of Microsoft Corp. with its Object Linking and Embedding (OLE) and Common Object Model standards. OLE is already on the market for nondistributed desktop platforms and has been endorsed by several hundred third-party software vendors.

"It's a better technology," said Roy Schulte, an analyst at Gartner Group, Inc., a consulting firm in Stamford, Conn. It "has an earlier time to market in its distributed form and is a clean architecture across IBM systems, none of which is enough to head off Microsoft."

OS/2 tools market comes alive. See page 85.

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Sybase enters workgroup fray

By Kim S. Nash

Sybase, Inc. is ready to deal in low-end databases.

In an effort to combat workgroup-level offerings from rivals Microsoft Corp. and Oracle Corp., Sybase repriced its System 10 database and plans to put it on several low-end systems, including IBM's OS/2, Novell, Inc.'s NetWare, The Santa Cruz Operation's SCO Unix and Microsoft's Windows NT, Sybase said last week.

The move is also intended to improve System 10's reputation as a scalable, "total enterprise" database, said officials from the Emeryville, Calif.-based firm.

"The war is on," said Rich Finkelstein, an analyst at Links Technology in Chicago. And that should mean added savings for users.

"The question is whether Oracle and Sybase have deep enough pockets" to keep up with each other and Microsoft in the thrust and parry of low-end database pricing that has begun, Finkelstein said.

Workgroup bargains

	Oracle Workgroup Server	Sybase Workgroup SQL Server
1 user	Not offered	$995
2 users	$995	Not offered
8 users	Not offered	$3,595
10 users	$2,995	Not offered
16 users	Not offered	$5,595
25 users	$5,995	Not offered
32 users	Not offered	$9,595
64 users	Not offered	$14,995
100 users	Not offered	$19,995

No cost deployment

In a significant change of pricing heart, Sybase plans to give away its Open Client software, which means companies can deploy Workgroup SQL Server applications to as many DOS, OS/2, Windows NT, NetWare and SCO Unix end users as they want — for free.

Workgroup SQL Server is priced significantly lower than the heavy-duty Unix product that is Sybase's bread and butter. However, the pricing is comparable to, if a bit higher than, Oracle Workgroup Server prices (see chart).

Microsoft, meanwhile, recently simplified its SQL Server for Windows NT pricing but effectively raised tags 13% to 75% in single-server scenarios. For example, a 64-user license for SQL Server formerly cost $7,795, but under the new plan it would cost $13,595.

Ripple effects are already being felt.

London Life killed talks with Microsoft a month ago regarding a 150-site Microsoft SQL Server license when Sybase offered its new low-end pricing, said John Thompson, director of information resource management at the insurance firm in London, Ontario.

Because the firm plans to outfit all 150 field offices with databases, "the money starts to add up," Thompson said. "We wouldn't have gone Sybase without that pricing."

Besides the database and operating system, Workgroup SQL Server packages will include Sybase's Open Client interfaces, SQL Server Monitor, SQL Server Manager and Backup Server.

Further, as expected, Novell and Sybase plan to make a separate announcement tomorrow about a SQL Server/NetWare bundle [CW, Sept. 19]. Like a similar package deal that Oracle announced in May, the Sybase bundle would be sold through NetWare resellers and include simplified installation and administration utilities for both the database and NetWare, confirmed Paul Koenig, director of workgroup products at Sybase.

The support piece of Sybase's workgroup announcement went over well with users and analysts. The firm has subcontracted technical support of Workgroup SQL Server to Hewlett-Packard Co.

"I wouldn't want to call [Sybase] up and hear that they didn't know the answers to my questions when I have a key project in the balance," said Erv Krawchuk, systems director at the Ministry of Labour in Edmonton, Alberta.

With less than 10% of its 16,000-site installed base on Intel Corp. platforms, Sybase lacks in-depth experience on the low end, said David Gunther, a special projects manager at Sybase's customer support division.

Customers would buy Sybase SupportPlus plans and call their regular toll-free number for service, Gunther explained. "But we've identified certain types of customers we feel are outsourceable to HP," he said. For example, users running pure NetWare environments would likely be turned over to HP engineers, he said.

Oracle sends feelers out for branch server. See story page 76.

Great expectations

Sybase also outlined changes to its Momentum application development tools plans last week, including a reorganization of the Enterprise Momentum branch of the product line.

The tools are intended to fill a hole in Sybase's product line. Sybase has historically encouraged its database users to turn to Powersoft Corp. and others for graphical, client/server development tools because Sybase had none of its own.

"Powersoft and the rest of them have made a good business out of Sybase's weaknesses," said Mark Hanner, an analyst at Meta Group, Inc. in Burlingame, Calif. "If [Sybase] puts some real marketing and technology muscle behind Build, they could put a dent in that."

Sybase plans to ship Build Momentum before year's end. The graphical development tool, designed to use some object-oriented techniques, is in its second round of beta testing at 30 sites.

Build, which will be priced at $3,450 per developer seat, takes a departure from other tools in that Sybase will not charge runtime fees for deploying applications created with the product.

Meanwhile, Enterprise Momentum will no longer be a separate development warehouse, as Sybase outlined last summer. Now, planned functions will be added to Build Momentum and packaged as smaller products. A string of discrete utilities such as modelers and generators are scheduled to ship in mid-1995, Sybase said.

— Kim S. Nash

Wireless

CONTINUED FROM PAGE 1

has a standard application programming interface.

"We're still looking for the service providers to move forward," said Lee Nolan, a senior telecommunications engineer at Travelers Insurance Co. in Hartford, Conn. Travelers is doing limited testing of CDPD, but until there are at least some interoperable pieces, "what's my incentive to be doing anything?" Nolan asked.

Users and industry officials cited several problems with the wireless market, including the following:

- A lack of technology that works, including the CDPD network.
- A lack of coordination among disparate technology vendors, resulting in PC cards, modems, drivers and other devices not fully tested for compatibility.
- Expensive base technologies that discourage pioneers. For instance, modems that can work with wired and wireless networks can cost more than $1,000 per unit.
- Inexperienced vendors.

The result, observers say, is that users essentially have to figure out the complexities of wireless by themselves.

CDPD officials acknowledged there are problems still to be solved.

"We need to get past those issues," said Chuck Berman, director of market development at McCaw Cellular Communications, Inc.'s Wireless Data Division. "Interfacing with the application developers is a key to breaking the whole thing loose."

High on the conference agenda this week are sessions on sending data wirelessly, protocol stacks and wireless and database technology. Still, the conference will only be a step toward fixing the wireless industry's general lack of experience, which has slowed even user pioneers.

Sears' *Larry Finney says it hopes to roll out a major customer service project in the second or third quarter of 1995*

At Sears, Roebuck and Co., the information systems department had planned to seek corporate approval to roll out a major wireless project for its customer service technicians this year, based on Ardis Co.'s Advanced Radio Data Information Services network. But technology delays have the IS department resigned to a second- or third-quarter 1995 rollout at best, said Larry Finney, systems director at Sears in Hoffman Estates, Ill. [CW, April 18].

The reliability of wireless communications also comes into play for users.

"The cellular phone is viewed as a sort of TV. You plug it in and it works, and everybody knows it works. With wireless, I don't know [that it works]" because of the limited testing of the various pieces that make up wireless data, said Frank DiOrio, product service manager at Eastman Kodak Co. in Rochester, N.Y. After more than four years of considering wireless, Kodak is piloting a field service application using RAM Mobile Data's network.

DiOrio said Kodak has had to educate itself on the pros and cons of wireless. Even though it will use the established RAM Mobile Data network, Kodak will pilot its application using both ruggedized handhelds and notebook computers because it could not find reliable information on which one would work more effectively in the field.

Despite these issues, some users are moving ahead, even with CDPD. Indiana Gas Co. in Indianapolis is preparing to test CDPD in conjunction with service provider BellSouth Cellular Corp.

"I'm not on a bed of roses here. I know we'll have our problems," said Paul Sylvester, director of telecommunications at Indiana Gas. "But these are pains you take to accomplish great things, and we think this is going to change the way we do business."

Sylvester said his firms's test with BellSouth will help both companies figure out what problems exist with CDPD technology. He said he is impressed so far with the vendor despite its CDPD inexperience.

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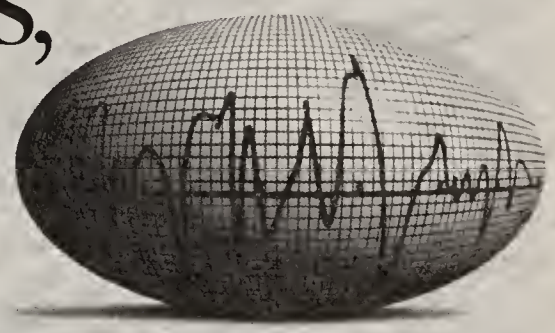

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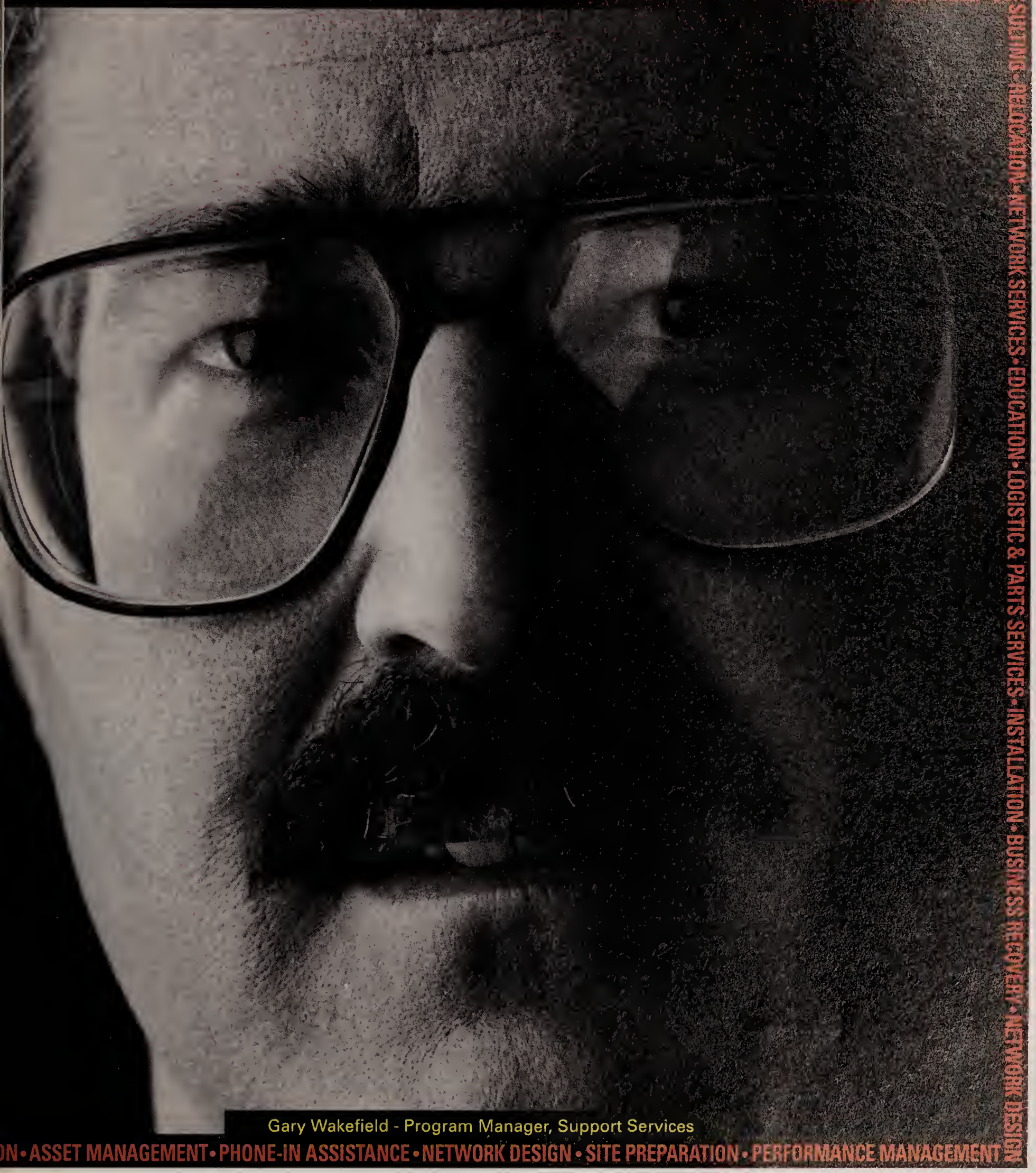

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Apple's FireWire to speed up multimedia

By Mark Halper

As Apple Computer, Inc. and IBM hash out a standard for PowerPC-based platforms, they need to decide whether to include a serial interface with the blistering speed needed to usher in the multimedia era.

Known at Apple as FireWire — and at the Institute of Electrical and Electronics Engineers, Inc. as proposed standard 1394 (p1394) — the serial connection would offer an average tenfold speed increase over current integrated drive electronics (IDE) and SCSI peripheral connections at a minimum rate of 100M bit/sec. It would operate at up to 400M bit/sec. in a high-end version, Apple said.

The technology also promises an increase in the number of devices supported by one port to 63 and will permit stringing peripheral devices up to 15 feet from the CPU. Apple is licensing its FireWire implementation to silicon, board and systems vendors including AT&T Global Information Solutions, although p1394 is a public domain design.

Vendors can save development time and expenses by licensing from Apple, said Gary Hoffman, who recently left IBM to head a p1394 start-up in Texas.

Apple demonstrated FireWire almost a year ago at Comdex/Fall '93 along with Texas Instruments, Inc., which is developing support circuitry.

Users hope Apple and other desktop firms will soon implement the technology or something comparable to help alleviate slowdowns in bit-intensive environments such as imaging and multimedia.

"We have lots of big audio and video files, and it's always a quandary how to get data from point A to point B," said Bruce Gordon, project director at Walt Disney Imagineering in Glendale, Calif.

Disney uses about 500 Macintoshes to create digital video images that are transferred to laser discs and projects at theme parks. Files can get as large as 1.8G bytes. The company uses digital audio tape to move the files from one machine to another. And that "is not a good way of doing it; the technology is lagging," Gordon said.

Fire bugs

Besides Apple, IBM and TI, 1394 Trade Association members include Adaptec, Inc., Philips Laboratories, Maxtor Corp. and Lexmark International.

Sought-after technology

Noting that five minutes of video data "can eat up 50M bytes," John Grabrick, an information engineer and Macintosh user at 3M Co., said new technologies are needed "to transfer data in and out of storage." He said he could not comment specifically about FireWire because of a nondisclosure agreement with Apple.

An Apple spokeswoman last week declined to say when Apple will offer FireWire commercially. She also would not say whether FireWire would replace the SCSI interface that Apple builds into the Macintosh or whether the two interfaces would coexist.

Pieter Hartsook, editor of "The Hartsook Letter," an Alameda, Calif.-based newsletter, said Apple will probably add FireWire to its Power Macintosh line in the second quarter of next year, the same time it plans to start building a Peripheral Component Interconnect bus as a replacement for its Nubus system bus.

Inclusion of p1394 in the PowerPC Reference Platform (Prep) would galvanize that process, according to Hartsook. Prep is a set of system specifications that IBM and other PowerPC system builders are using for PowerPC system design.

Apple's Power Macintosh line does not currently conform with Prep. While Don Strickland, Apple's vice president of licensing, did not say FireWire is under discussion, he noted that Apple and IBM differ over interface technology, with Apple favoring SCSI and IBM favoring IDE.

What is not clear is whether Apple is pushing for its FireWire trademark rather than a more generic implementation of p1394. Support for the standard is growing, as about 20 companies have joined the 1394 Trade Association.

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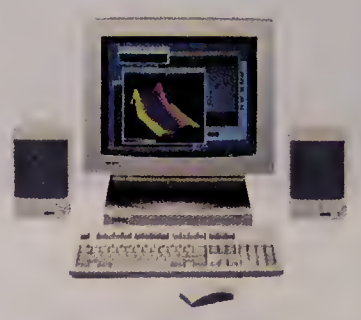

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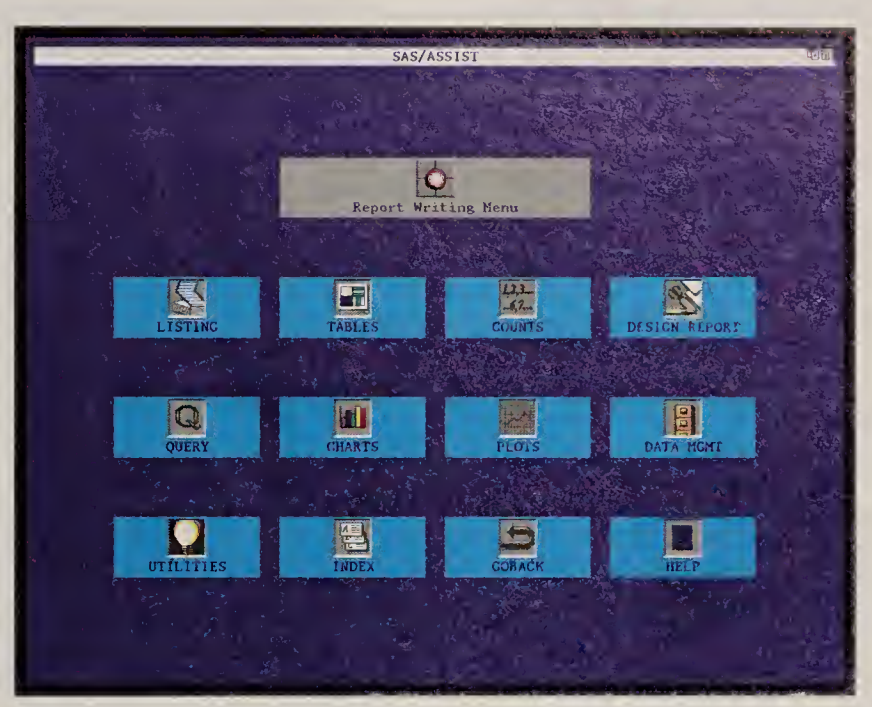

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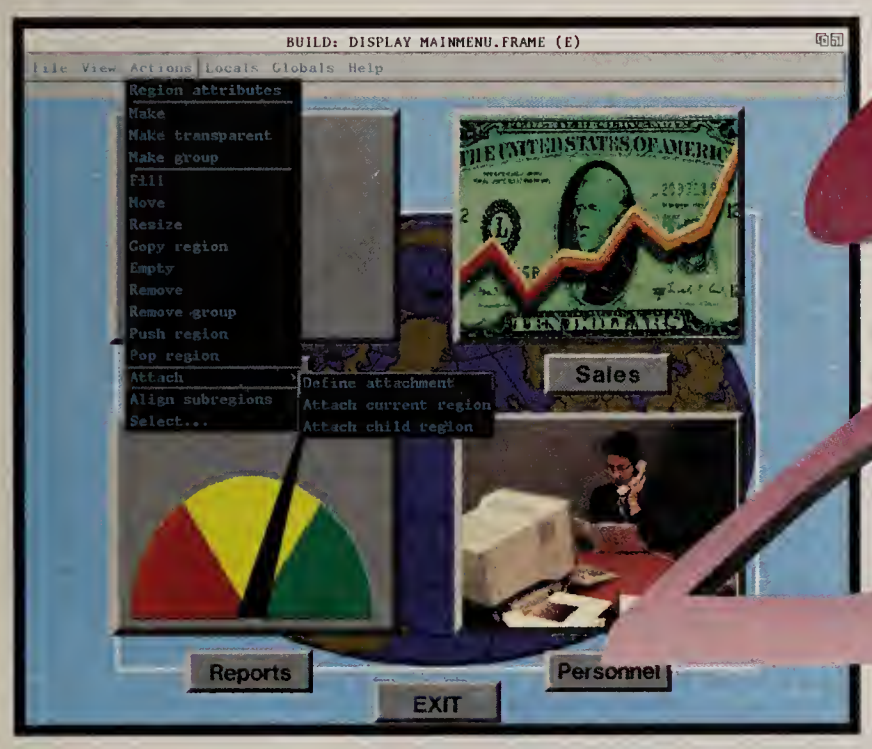
2



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Users eye game technology to spice up service

By Suruchi Mohan
LOS ANGELES

Although video games have been around for more than two decades, some businesses are realizing that this technology could prove useful in their environments.

The interest is sparked, in large part, by the processing power of new PCs that can now run video games — traditionally applications that needed dedicated platforms, said Ted Prince, publisher of the "Technology Fundamentalist" newsletter and president of Perth Ventures, Inc., an investment banking company in Hawley, Pa.

Perhaps the biggest use of the technology is in simulation. While its use in extremely specific environments is not new, use in corporate environments is. For example, users can now study a specific aspect of the economy or the competition using simulation packages, said Chris Langton, director of the artificial life program at the Santa Fe Institute in Santa Fe, N.M.

Studying the competition is exactly what William Nusbaum, vice president of organizational architectures at Pacific Bell in San Francisco, is doing with TeleSim, a simulation software developed by Thinking Tools, Inc. in Monterey, Calif. "Together with Nynex, we are trying to create a tool for people to think differently about a business," he said.

Playing the game

John Hiles, president of Thinking Tools, said he expects many companies will come forward with their methods for using video game technology in the next six to nine months.

The model lets users look at the geography and neighborhoods in the San Francisco area and simulate what would happen if cable and cellular providers were to offer competing services, Nusbaum explained. Pacific Bell tries to assess what the customers' response would be in terms of quality, service and price.

Although not predictive, the program provides an idea of what to expect from the competition and how to explore the dynamics of a situation. Nusbaum said he expects it to eventually become a decision-support tool.

But profiting in the marketplace is not the only reason for employing video game technology. For Taco Bell, the $3.9 billion business of Pepsico, Inc., the reasons are far more complex.

Taco Bell employs 90,000 workers and has an annual turnover of 130%, according to Eric Jones, an information technology group manager at Taco Bell in Irvine, Calif. Most employees have fifth- to eighth-grade reading and math skills with little or no computer experience, a demographic that closely matches that of Taco Bell customers. And because there is now only one manager for every three and a half restaurants rather than one per restaurant, there is a greater demand for employees to be self-sufficient.

But self-sufficiency does not come easily when the only way to gauge performance is by examining a numerical report that states the difference between the amount of ingredients actually used and what should have been used.

To remedy this, Taco Bell will soon use a creative interface that tells employees exactly how they are performing at given points in time. With icons such as speedometers, employees will know if they are using the right amount of cheese on a taco, for example. As each transaction is entered into the Unix system, the speedometer will indicate the base level and where employees place.

The reports will also have video and audio capabilities and allow scoring and competition. Jones said he expects the system to be running by the middle of next year and hopes it will help prevent employees from leaving the company.

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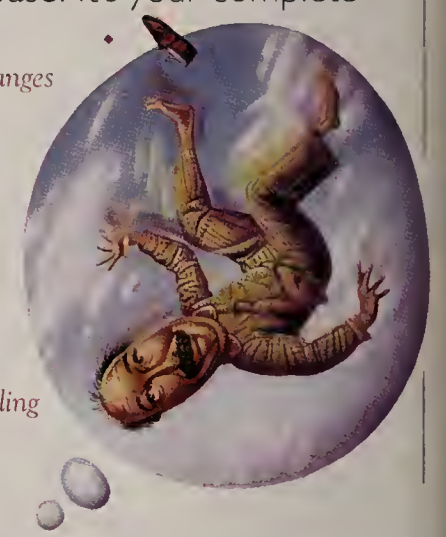

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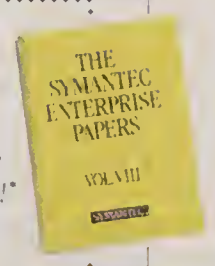

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Apple struggles to fix net shortcomings

By Steve Moore and Mark Halper

At the ripe old age of 11, Apple Computer, Inc.'s Macintosh is still an afterthought for many network and systems management software vendors.

But these days, Apple is trying to stage a desperately needed network/systems management renaissance — most recently by working with Microsoft Corp. to include extensive Macintosh support in Microsoft's influential Systems Management Server.

While the Macintosh itself is easy to implement and maintain on the wire, it is a herky-jerky performer at the multivendor enterprise level, where it lacks management tools, according to users and analysts. Although Apple now offers new Power Macintoshes based on the muscular PowerPC chip, "they have no network management services, large-scale database services or E-mail directory services that are scalable beyond small workgroups," said John Morency, a principal consultant at Strategic Networks Consulting, Inc. in Rockland, Mass.

As a result, Apple's efforts to elbow its way into the enterprise market may be short-circuited by performance problems with AppleTalk in large networks.

Matt Ghourdjian, national director of technology at the Los Angeles law firm Howrey & Simon, said Macintoshes are easier to support on LANs than Intel Corp.-based machines. But he noted, "There are certain anomalies that come into play when you're dealing in wide-area networks; there are weird things that happen with distance that won't happen locally."

Ghourdjian explained that the AppleTalk protocol insists on constant acknowledgments, or handshakes, between Apple machines. "When you start talking about an acknowledgment that has to travel 3,000 miles, you're talking about a lot of overhead," said Ghourdjian, who connects about 700 Macintoshes among offices in Los Angeles, Washington and Denver.

"Macs are actually good in wide-area networking," said Pieter Hartsook, editor of the Alameda, Calif.-based newsletter, "The Hartsook Letter."

"Where they fall down is in large enterprise environments where you have thousands of nodes and people are trying to use the AppleTalk protocol. Because of its original design, it tends to be chatty. It generates a lot of network traffic, so it tends to slow the network down," he said.

Much needed support

Apple's Open Transport Protocol, expected next year, will alleviate some of those anomalies because it will support protocols outside Apple's AppleTalk and EtherTalk realm, users and analysts predicted.

Some users said they are still looking forward to a server version of Novell, Inc.'s NetWare for the Macintosh, which Apple has promised by the end of the year. Kim Brown, an analyst at Dataquest, Inc. in San Jose, Calif., also noted that the Macintosh lacks a version of Portable NetWare.

In general, Apple users said they are ecstatic about the ease with which they can manage self-contained Macintosh domains. But they said they remain frustrated by the difficulty of melding those domains into multivendor enterprise networks.

"We have a huge amount of AppleTalk, and we have difficulty monitoring that in a centralized way," said the network manager at a large federal agency. "We're trying to integrate this stuff in a centralized operating environment, but there's really nothing out there that can pull it all together."

Those concerns were reflected in a survey by MacIS, a Mason, Ohio-based corporate user group, which earlier this year reported that its members were most interested in improved networking across environments [CW, Aug. 1]. Still, many Apple users in mixed shops said they regard the Macintosh as a more elegant networking machine than Intel-based systems.

"We take the Mac out of the box, and within 15 minutes it's up and functioning on our network," said John Grabrick, an information engineer at 3M Co., which runs an Ethernet network with fiber backbone connections between buildings. "You try that with Intel boxes, and it's a crapshoot if you have one up within four hours."

Rex Levie, a technical systems specialist at Kaiser Permanente Health Plan, Inc. in Pasadena, Calif., said Kaiser runs a network of about 2,000 Macintoshes in Southern California cities using routers and three maintenance employees. A comparable Novell setup would require about 60 maintenance staffers, he said.

"The Macs are easier to manage than Intel-based machines because a lot of the complexity is hidden away from the users," said Peter Tittler, vice president of networks and technology at Avis, Inc. in Mineola, N.Y. "We only need two LAN administrators to run 800 Macs, so we have a support ratio of 400 units-to-one LAN administrator, not 50-to-one as people say is typical with Intel machines." However, almost all of Avis' Macintoshes are in one building, and the company has not yet acted on plans to put Macintoshes in dispersed locations and manage them centrally.

A bad rap

"There are still some legacy misconceptions that the Mac is hard to communicate with," said Garry Hornbuckle, Apple's product line manager for communications products. He emphasized that Apple wants to make the Macintosh a manageable desktop in heterogeneous network environments and has been shipping built-in Simple Network Management Protocol support for a year and a half.

"Where we need to improve is in bringing some management tools down to midsize users who may not have Unix consoles to work from," Hornbuckle said. Rather than build its own desktop console, Apple's strategy is to work with third parties that are doing so, he said. Two companies that offer Macintosh-based consoles are Caravelle Networks Corp. in Nepean, Ontario, and Beyond, Inc. in Walnut Creek, Calif.

Apple's challenge is to maintain its system software advantage as Microsoft adopts more Apple features and functions, said David Passmore, a principal consultant at Decisis, Inc. in Herdon, Va. "The things people are excited about in Chicago and Windows 95, including Plug and Play, have been in the Mac for years," he said.

The race is on

When it comes to Apple, Microsoft has proved tough to beat on both sides of the fence. On one hand, its system and application software enabled the IBM PC to shunt Apple's Macintosh aside in most corporate computing environments. Yet the desktop behemoth has also managed to simultaneously claim its own chunk of the Macintosh application market.

Today, Microsoft's self-interested inclusion of extensive Macintosh support in its Systems Management Server (SMS) may give Apple a much-needed shot in the arm. SMS features built-in support for the Desktop Management Interface (DMI), an important new standard for managing LAN-attached PCs.

Thanks to DMI, SMS provides users with a relatively level systems management playing field on which DMI-eompliant IBM and Apple desktops can compete. Like Microsoft, Apple has participated in developing DMI and is a member of the Desktop Management Task Force, the industry consortium driving the DMI standard.

DMI may mark a turning point for the Macintosh. "If Apple leverages DMI to a lesser degree than Microsoft, then you won't be able to manage or charge back for usage of Mac applications to the same degree you can with Windows," said John Morency, a principal consultant at Strategic Networks. — *Steve Moore*

Mac Office suite disappoints users. See page 46.

SGI stretches toward supercomputer performance

By Jean S. Bozman

Silicon Graphics, Inc. (SGI) is upping the ante on its lead in the high-end graphics workstation market this week by adding a supercomputer-style chip to its Indigo2 workstations and boosting the speed of its high-end Challenge Unix servers.

The move by the Mountain View, Calif., vendor will allow scientific workstation users to interactively visualize eomplex data as well as give commercial server users more support for multigigabyte databases, SGI said.

The firm is adding its R8000 chip — previously used only in SGI's Power Challenge supercomputers — to Indigo2 workstations. The new Power Indigo2, set to ship in the fourth quarter, starts at $46,000.

Which is which?

"It does further blur the distinetion between supereomputers and workstations," said Chris Willard, an analyst at International Data Corp. in Mountain View. Willard said Power Indigo2s could be used to develop and test supercomputer applications or to do eomplex scientifie work in real time.

"The target is to have a more interactive environment," said Dominic Ricchetti, director of workstation research at Dataquest, Ine. in San Jose, Calif.

Val Watson, a senior scientist at NASA Ames Research Center at Moffett Field near Mountain View, said the R8000 workstation could save the eenter's SGI workstation users from waiting for supereomputer time for airflow simulations. "The supercomputers here are doing leading-edge work that takes hours of eompute time," Watson said. "We want to off-load any jobs we ean to the workstation, and this will allow us to do that."

At the same time, SGI's Challenge L and Challenge XL Unix symmetric multiprocessing servers are being outfitted with a 200-MHz R4000 RISC chip. Sold through systems integrators that package Challenge servers with applications, the models address data warehouse applications with multigigabyte databases, said Ihab Abu-Hakima, director of marketing at SGI's advanced data division.

SGI recently demonstrated a 200G-byte Oracle Corp. Oracle 7.1 parallel database running on a 32-bit proeessor Challenge XL, he said. The 200-MHz Challenge L is priced from $88,800, while the 200-MHz Challenge XL is prieed from $138,800, the eompany said.

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Briefs

CNT trims to save

Computer Network Technology Corp. announced it will cut its staff by 15% to compensate for increased 1994 expenditures related to its Ultranet line, which will not generate as much revenue as had been anticipated.

Encore warns of loss

Encore Computer Corp. said it anticipates a significant loss for the third quarter ended Oct. 4. due to start-up costs for its new storage product line. Meanwhile, it will sell more than $200 million in storage system products in an OEM deal.

Landmark falls short

Landmark Graphics Corp. expects to report revenue of about $30 million for its first quarter ended Sept. 30, about $4 million less than analysts expected. The company attributed the results to a slowdown in the U.S. market but said it expects to return to normal spending patterns soon.

Amdahl spins off firm

In return for a financial interest and a contract allowing **Amdahl Corp.** to distribute its products, spin-off **Lexa Software** will take over Amdahl's Unix programming language tools. Lexa will produce multiplatform software development tools for distributed application development.

SHORT TAKES After 10 years of courtship, **Informix Corp.** has agreed to form a joint venture with **ASCII Corp.** to acquire its database division. . . . Michael Pocock has left **QuadMark Ltd.** to join **Digital Equipment Corp.** as vice president of sales for its personal computer unit. . . . Unable to agree on final terms, Fiserve, Inc. has discontinued talks with AT&T Global Information Solutions on purchasing AT&T U.S. Data Services. . . . Ceridian Fiserve will pay $1.5 billion in cash for Ward Corp.'s Mead Data Central.

Praxis forges data warehousing plan

By Rosemary Cafasso

Sometimes old dogs can learn new tricks.

Take Praxis International, Inc. in Cambridge, Mass., for example. The mainframe database company earlier this month set out to reinvent itself in data warehousing and cut its dependence on host database revenue.

Beginning early next year, Praxis plans to roll out the Omniarchitecture series, starting with replication tools to move data from one database to another. Also on the agenda is the Omniwarehouse data warehouse, a Unix-based system that is a completely different technology from the vendor's current host-based database management system.

Replicated revenue

The data replication market generated about $13 million in revenue in 1993 and should rack up about $309 million in 1998, according to International Data Corp. The market research firm does not yet include replication in the data warehousing market because so little of last year's revenue came from warehousing.

Analysts said 29-year-old Praxis, formerly Computer Corp. of America, stands as good a chance as any company in the $753 million data warehousing market. In short, the market is too new for analysts to declare clear winners.

"This is a lot more interesting than trying to take your old database and stick it on Unix, a la Cincom and Software AG," said Donald Feinberg, an analyst at Gartner Group, Inc. in Santa Clara, Calif.

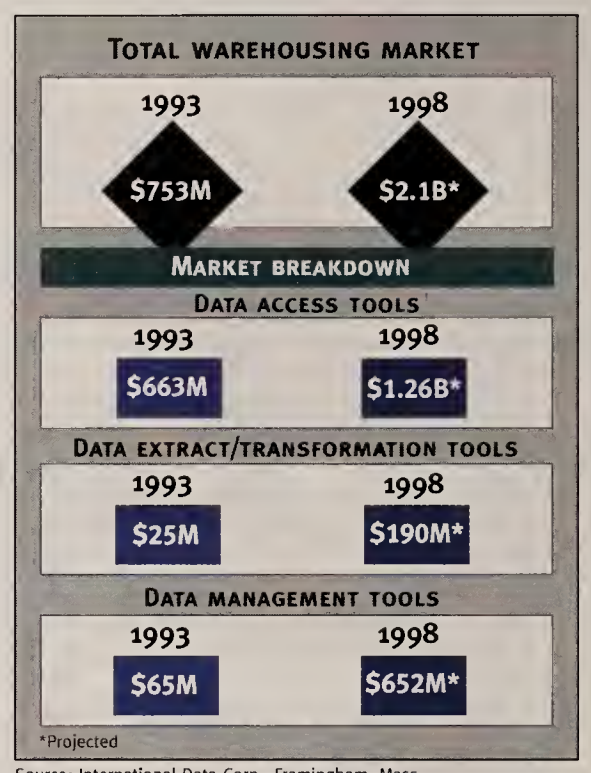
Several industry heavyweights, including IBM, Hewlett-Packard Co., Oracle Corp., Sybase, Inc. and SAS Institute, Inc., are targeting the warehouse market with various combinations of replication, query and data management tools. There are also several smaller companies — for example, Red Brick Systems and Prism Solutions, Inc. — that are already well established in the warehousing market.

The trick for Praxis will be to stand out in a crowd of better-known rivals.

Seeking an advantage

Company executives contend that Praxis can differentiate itself from some of its warehouse competitors also selling client/server production databases. As such, their warehouse tools are often part of a total sell that includes the DBMS, they said.

Praxis' plan calls for database neutrality by offering so-called bidirectional replication tools, which will support a number of source and target databases. That should give users the tools to move data to and from whatever databases they choose.



Source: International Data Corp., Framingham, Mass.

Feinberg and other analysts give that approach a thumbs-up but noted that a product's proof is in the shipping. "If they can deliver, I think this is a heck of an effort," said Carl Greiner, an analyst at the Meta Group in Westport, Conn. "But it is proven on delivery. Anyone can promise."

No desertion here

Data warehousing is actually an old mainframe concept that calls for pulling data out of a production database, cleaning it up and loading it into an end-user database.

Although Praxis is shifting toward newer markets, company executives said support will continue for customers of the Model 204, the mainframe database for which Computer Corp. of America was best known. A new version of Model 204 is scheduled for December, said Beverly Brown, Praxis' executive vice president of marketing and business development. The company will also continue to sell System 1032, a Digital Equipment Corp. VAX-based DBMS, and Marketpulse, a Model 204-based marketing database. These products brought in about $34 million in revenue last year, according to Brown.

Cheyenne earnings raise questions about future

By Mary Brandel

Is two a trend?

That is what observers wondered last week as Cheyenne Software, Inc. warned Wall Street for the second quarter in a row that its earnings would be below expectations.

Instead of the 14 cents per share forecast for the first-quarter 1995 ended Sept. 30, the dominant LAN backup player said it will earn 8 cents to 11 cents per share. Sales will be $20 million to $22 million, compared with $20 million in sales and 18 cents per share for the same period last year.

Reasoning it out

Jim McNiel, executive vice president of business development at Cheyenne, listed several reasons for the sales drop-off, including distributor caution about inventory levels, first expressed in fourth-quarter 1994 [CW, July 11]; revenue reduction from at least one large OEM customer; traditionally slow summer months; and a ripple effect from slow sales of Novell, Inc.'s NetWare 4.0.

McNiel defended Cheyenne's revenue growth, pointing out that "selling $90 million worth of backup is unprecedented in the PC LAN space." He added that while the company will not mirror its 85% growth of last year, customer sales remain strong.

Analysts agreed that Cheyenne is certainly the biggest player in the PC-LAN backup arena, with 300,000 customers of its Arcserv backup software. Still, some said the firm may have hit a crisis point.

As the dominant vendor, Cheyenne "ought to appear like the rock of Gibraltar," said Rob Enderle, a storage analyst at Dataquest, Inc. in San Jose, Calif. Instead, "they appear to be reactive right now."

The backup market is a saturated one, Enderle added. At the same time, competitors such as Legato Systems, Inc., Arcada Software, Inc. and Palindrome, Inc. are aggressively trying to displace Cheyenne, particularly in sites unhappy about a disastrous release of Arcserv earlier this year.

Cheyenne says the bugs in Arcserv are fixed. But "it will be hard for them to hold onto their installed base, let alone continue dramatic growth," Enderle predicted.

McNiel admitted that the competition is "an order of magnitude more impressive than two to three years ago." However, that should not affect market share, he said.

The financial news will not likely precipitate a user revolt. "Novell isn't doing as well as the industry would have hoped either, but we're not going to jump off that bandwagon," said Mike DeTuncq, a senior network analyst at Arco Permian in Midland, Texas.

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Editorial

Data debased

If you were about to have brain surgery, would you want to know if your surgeon was among those most frequently sued for malpractice?

As a parent of small children, do you have a right to know whether the man who moved in next door is a child molester?

Or, if you are helping your aged parents with planning the estate they labored for years to create, would you want to know whether their lawyer has ripped off the elderly in the past?

These are rhetorical questions; the only answer to each is "but of course." So why is there such formidable opposition to public access of computerized databases listing information like this?

We have the database technology and access means to make such inquiries a very simple matter. IS has created the tools, and the public has created the demand.

Unfortunately, we are stuck with utterly self-serving groups such as the American Medical Association (AMA) and the American Bar Association (ABA) that maintain that such access to records of misdeeds somehow violates their constituents' privacy.

Baloney. A recent series on medical malpractice in *The Boston Globe* found that a very small percentage of doctors account for a very large percentage of malpractice claims. Either they are very unlucky, or they are bad doctors. It makes perfect sense to leverage today's database technology to root out the people the AMA is shielding, and thereby continuing to foist on unsuspecting patients.

The only rights being violated are those of the consumer, who quickly becomes a victim.

As practitioners of information technology, individuals in the IS community can have a lot to say about the efficacy of well-conceived databases. These voices can add to the rising chorus of consumer activism and eventually drown out the AMA, ABA, American Civil Liberties Union and other groups that seek to screw the victim and protect the criminal.

*****

Sick of negative news and bad press? So are a lot of other people.

Now you can play a role in helping a deserving IS team get a richly earned pat on the back (not to mention a great trophy) by nominating a user organization for our Third Annual Re-engineering Team of the Year award.

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Bill Laberis

Bill Laberis, *Editor in Chief*
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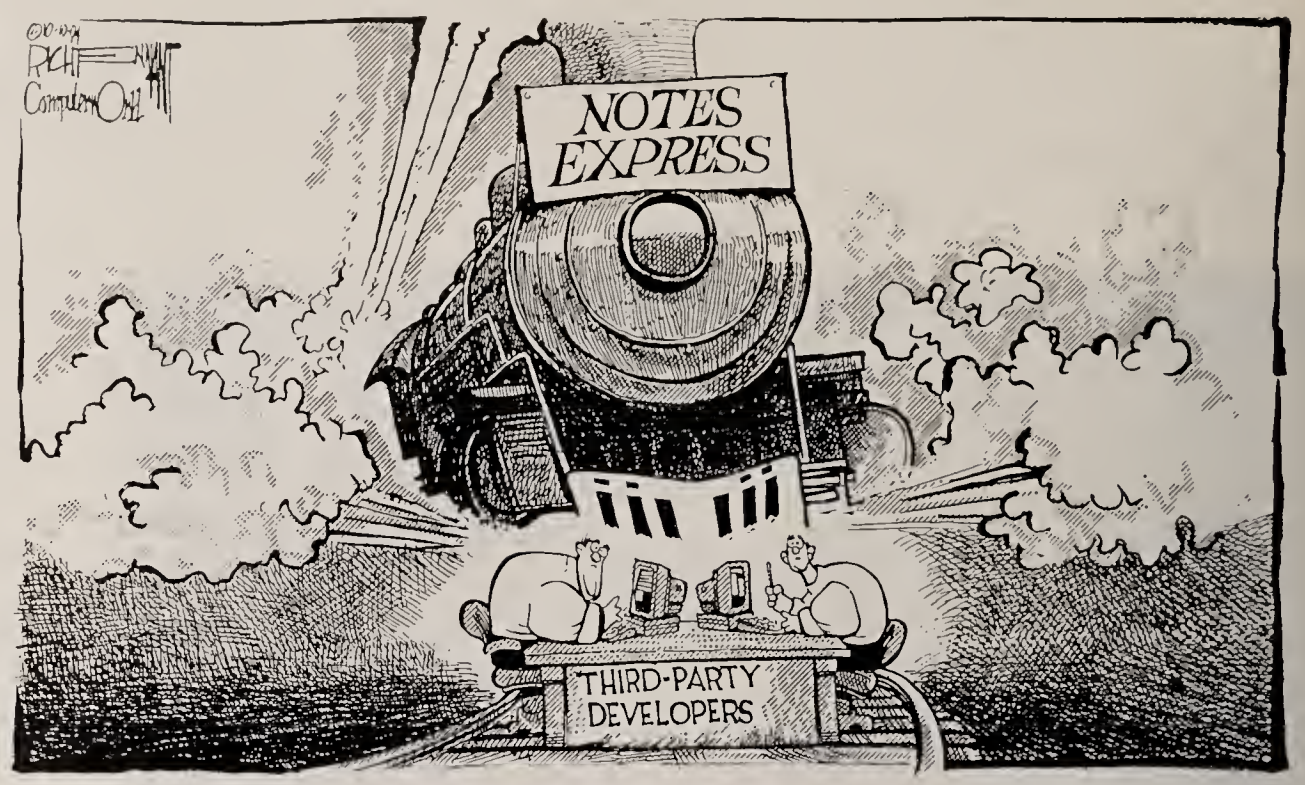

Letters to the editor

King of the road

Thank you very much for vigorously opposing federal takeover of the information superhighway ["Stay out of the way," CW, Sept. 26].

Al Gore and his ilk seek nothing less than government control of both the distribution and content of all information in this emerging megamedium.

Dave Nelson
Corvallis, Ore.

No confidence

Your salary survey [CW, Sept. 5] suffers from poor methodology. You reported "average" salaries for 562 categories but had only 908 respondents to your survey — an average of just over 1.6 per job per industry classification.

No self-respecting statistician would report an average for a job where N=1 or try to portray industry information based on such small samples. How can any confidence be placed in the majority of information presented?

Darwin Wilde
IS manager
Our Own Hardware Co.
Burnsville, Minn.

Certifiably opposed

The debate about programmer certification ["Can programmers commit malpractice?" CW, Aug. 29] was unbalanced because James B. Webber is unfamiliar with the problem and presented only weak arguments against certification.

The problem with certification and individual liability is that it works well only when the professionals are self-employed. For an employee of a corporation, responsibilities are spread and blurred among the individual, the team and the company.

If programmers were self-employed and sold their services directly to the general public, my position — against certification — would be different.

R. J. Mills
Senior consultant
Power Technologies, Inc.
Schenectady, N.Y.

For the most part, certification is the wrong approach. The bottom line is the ability to produce good systems. A good system is dependent on how well it can be tested. Pilot systems can become embedded, and then an intensive and costly re-engineering effort is required to correct them. Life-critical application developers have no business implementing a system if a complete suite of operations tests cannot be devised.

Certification should not be for the programmer. Rather, there should be one certification standard in software methodology and at least one software process expert for every major project. Every organization should also implement a development methodology and require that their hires [understand it]. Quality assurance must be put into the project at the earliest stages of development and continue throughout its life cycle.

John R. Wetseh
Rateigh, N.C.

Powersoft piece misrepresents

"Powersoft catches user flak" [CW, Aug. 22] did Powersoft and *Computerworld* a grave disservice. The Powersoft forum on CompuServe has in excess of 16,000 members. Conversation threads on almost any topic dealing with Powersoft attract lively discussion. To listen in on these conversations, selectively take negative remarks out of context and put them in an article on the front page of a prestigious periodical such as *Computerworld* does Powersoft an injustice.

An article using the same set of "facts" could just as easily proclaim that out of 16,000 users given the chance to respond, 50 indicated some dissatisfaction with the product. The headline could have read "99.7% of PowerBuilder users indicate satisfaction."

Clement J. Kiehuk
President
MetaCorp Strategies International
Westport, Conn.

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Working together

Ellis Booker

The latest Nostradamus Research report has just landed on your desk. "Virtual organizations," it confidently begins, "will emphasize mobile knowledge workers and untethered computing, providing unprecedented levels of customer service and flexibility."

Yeah? What about gossip around the coffee machine? What about quick lunches for complaining about clients/bosses/spouses? Will a bunch of strangers show up at the office Christmas party?

Make no mistake. The virtual office has a lot going for it. Companies such as IBM and AT&T — both early advocates of the concept —have saved bundles on expensive, swank office space for their sales staffs, cut hellish commutes and, more important, increased the amount of time workers spend where they are most valuable and needed: at a customer's place of business.

But in the rush to create virtual workplaces, employers had better look beyond savings in floor space and figure out ways to nurture those undocumented benefits of working in physical proximity to people.

More than human happiness is at stake here.

Organizations pursuing virtual offices, those with the lofty strategic goal of "nimble and responsive work teams" will get none of that unless they pay much more attention to their workers — read PEOPLE — than they do today. A team simply does not play well unless its members know one another, unless they practice together before the game and unwind together afterward.

"From a productivity standpoint, people were excited," said Ann Trapnell, a marketing communications strategist at IBM in Minneapolis. But workers were also concerned about losing a sense of community, said Trapnell, one of 300 to 400 IBM employees in Minneapolis to move to a "shared office" design in the past 18 months.

In the rush to create "virtual" workplaces, employers must figure out ways of nurturing the undocumented benefits of working in physical proximity to people.

One solution at the IBM office has been to stress community projects, which bring members of the office together to serve the local community. The IBM office has participated in the Special Olympics and sponsored the "paintathon" in the Twin Cities, an annual event that involves refurbishing low-income houses.

Also, "once a quarter we'll have some sort of social function, a holiday get-together or a parade," Trapnell said. Employee-only events such as pizza parties are also planned.

The truth is, IBM and other companies implementing a virtual office are feeling their way in the dark.

Managers and employees alike are unaccustomed to this new way of working, and new procedures and subtle etiquettes will have to evolve over time.

AT&T, which has pushed a mobile office strategy since 1990, is now screening potential mobile workers in advance to spot those people who might feel especially unmoored by this structure and suffer morale and productivity problems.

In the meantime, any company considering dispersing its work force and tying it together with sophisticated voice-mail and electronic-mail systems also better budget a lot of mixers and company picnics.

Booker is a senior editor in *Computerworld*'s Midwest bureau.

Information underneath

Esther Dyson

Welcome to the brand-name war between information providers such as *Time* magazine — or this newspaper — and information deliverers such as America Online and CompuServe. The current Intel vs. Compaq fuss over branding is just a foretaste of what we're about to see on the overhyped information superhighway. Just as a PC may be better if it has "Intel inside," so may an information service be better if it has a particular brand name underneath.

Just as the principle of standardization on Intel is putting Compaq's premium image at risk, so will the principle of interoperability — in essence, standardization of access to information — put the large on-line services at risk.

Currently, these services combine a number of functions: access to an on-line service, access to electronic mail and access to content. Because each has its own proprietary format, access methods and the like, they come as a package with a brand name. You can send an E-mail from one service to another but to get to *Time*, for example, you have to go through America Online; or for the forum on Polish businesses, you have to go to Poland Online.

Of course that makes America Online happy (and rich), but does it really please *Time* or the customers? They would like to be able to reach each other without America Online (or CompuServe or Prodigy or Poland Online) taking anything off the top.

Thus, we will soon see a battle of the information brands. America Online wants to sell you on its product, while *Time* wants to sell you on the uniqueness it delivers over any service. *Time* and *The Wall Street Journal* want to maintain their own unique look over any service; each provider wants to put the same interface on its offerings everywhere.

We will soon see a battle of the information brands pitting content providers against services.

With the promised universal access of the Internet, why can't any person reach any content provider or group of users directly? In the long run, the content will be reachable anywhere. And it will be in the content providers' interests to sell through all services, just as Intel wants to sell its chips through AST, IBM, Dell and Compaq. User billing will be handled by cross-vendor services.

Technically, there will be no reason for premium intermediary services. (The point of the Internet is not just 500 channels but a single channel from your machine to any other "channel" in the world.) Thus, the premium intermediaries need a nontechnical reason for their existence — and their premium charges.

It's no coincidence that America Online has acquired Redgate Communications — a marketing and content company — and CompuServe acquired Network Publishing, a firm that helps on-line publishers build services. The biggest opportunity for the on-line services in the long term is to become a brand-name commodity available on any service. The service these systems provide won't be static information, which will become a commodity or a brand-name product available on any service. This service will be an information environment of rules for behavior, informal expectations about whom you might meet on-line and perhaps personalities that belong to the service itself. It's a living community rather than static intellectual property, and it's made fresh every day from a single virtual location.

Dyson is president of EDventure Holdings, Inc. in New York. She welcomes readers' thoughts and can be reached on the Internet at edyson@eff.org.

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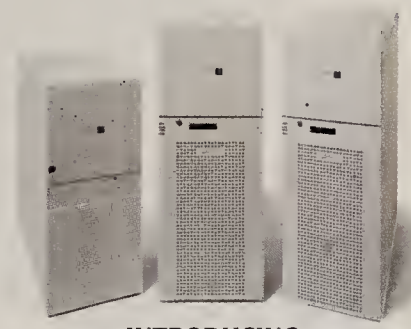

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Letters to the editor

Haunting vision

I read with curiousity and trepidation "The ghost of IS future" [CW, Aug. 22]. While I do not dispute Leilani Allen's desire to empower users, I am concerned about several of her suggested methods for achieving that goal.

A regular replacement/upgrade of hardware and software will inject chaos into a streamlined system in technical aspects and training. Non-IS personnel do not always embrace constant change when significant learning curves must be overcome. And the increased cost of hiring the talent necessary for such empowerment will be felt on all levels.

Removing the concept of an information technology benefit leaves no metrics to determine if costs are out of line for value received.

If speed of delivery is the only metric available to measure performance, then one must expect that many empowered users will do a lesser-quality job designing their personal support tools. I can only imagine a user-created database query that prints 10,000 loan-delinquency notices based on the wrong date. Of course, these would be mailed and the phone lines would be jammed before any information technology staff member would get involved.

Douglas A. Jones
Information systems director
Vacation Charters Ltd.
Lake Harmony, Pa.

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Oh yeah, Jim, treat it like turtle soup, and make it snappy.

CUT ALONG DOTTED LINE

Software, Inc. Key Code: CW 10/94

Another factor in software pricing

In "What if software were free?" [CW, Aug. 15], Esther Dyson could have spent some time discussing why some software has a more expensive infrastructure than others.

Some of us in the software business are very concerned about $95-a-copy software. We are not all in the commodity business. The cost of software in today's non-PC market is driven by more than just the cost of the infrastructure. Market size is a primary determinant. It is a fallacy to suggest that reducing the cost from $50,000 per copy to $500 will sell 100 times more copies.

John de Wit
Synon Corp.
Larkspur, Calif.

Banyan slighted

I read Buyer's Scorecard, "Netware 3.x rates low in ease of installation, cost," [CW, Aug. 15] with mixed emotions: I was delighted that 200-plus users polled gave Banyan's Vines 5.5 a clear advantage over Novell's NetWare, Microsoft's Windows NT Advanced Server and IBM LAN Server 3.x and puzzled that the accompanying text devoted an inordinate amount of space to NetWare 3.x and hardly any space to Vines. The article bypassed the positive message of the surveyand instead took a negative tack that diluted the ratings.

NetWare 3.x had the lowest ease-of-use rating and Vines 5.5 had the highest. The article cited consultant Robert Harbison speculating about what Novell might have done wrong with its new installation procedures but said not a word about why the respondents thought Banyan had done the best job with regard to ease of use.

Later, the article stated that Vines 5.5 was the "highest satisfaction achiever," "boasts the highest-priced network operating system" and "yet users still awarded it a competitive rating." Why is this an anomaly? Users concluded that Vines offered them the best value for their investment.

Jerry Rulli
Vice president, channel sales and field marketing
Banyan Systems, Inc.
Westboro, Mass.

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A proving ground for organizational change

By Roger T. Sobkowiak and
Ronald E. LeBleu

Stephen Hawking, the Cambridge Cosmologist, said there is no prescribed route for arriving at a new idea; you have to make the intuitive leap. But once you've made that leap, you have to justify it by filling in the intermediate steps. Hawking himself often has an idea, but when he tries to fill in the intermediate steps, he finds they don't work and he abandons the idea.

Sobkowiak

That is a wonderful approach for the scientist searching for the cure for AIDS or the astronomer mathematically defining the beginning of the universe. But what about the IS manager who has a vision of a perfect organization but is faced with abandoning that vision because of difficulties with those "intermediate steps"?

LeBleu

If only we managers could experiment in a laboratory before executing decisions affecting real people and real lives! Cutting up a frog seems so simple compared with cutting up and downsizing an organization. Building a clay model first and then smashing it seems far more humane than actually tearing apart an organization.

> *If only we managers could experiment in a laboratory before executing decisions affecting real people and real lives!*

Every day good companies and good executives have good ideas and find themselves unable to fill in those intermediate steps. The consequence is organizational change that misses the mark, is abandoned altogether or is put on hold for the next management team. For every success story, there are 20 stories that companies would rather not have anyone hear. And the war stories and corresponding losses are growing.

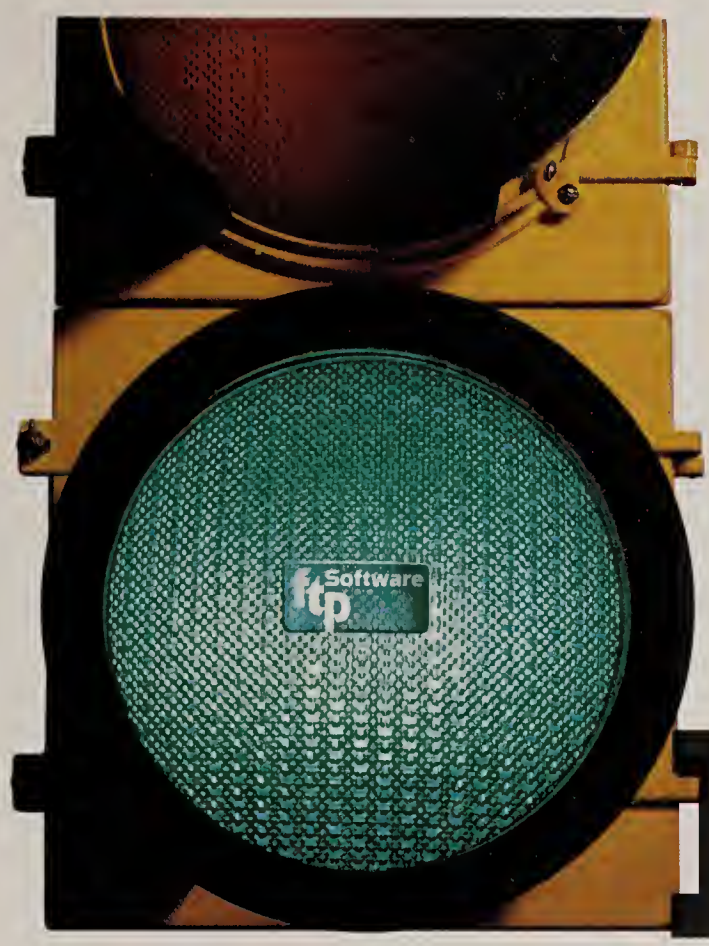
So is there a way to crash test organizational designs before a company takes them on-line? Pilot and demo projects are not enough. Business simulations and games are headed in the right direction, but they don't yet meet the need.

What is needed is a life-size model in which executives can grapple with an idea and see how good they are at filling in the pieces — those intermediate steps — in complete safety. Such a model could be a national proving ground similar to what NASA might use to test billion-dollar hardware. It would be a place where executives from any company could test their ideas and see the consequences.

Sound too much like a science fiction novel? Not really. Why couldn't a university or a government agency sponsor a lab for organizational experimentation? Why couldn't executives who make major decisions be convinced that two days on the proving ground could save billions of company dollars — and possibly thousands of jobs, including their own?

We executives continue to stumble, even though we may have an idea whose time has come. The processes familiar to us — benchmarking, piloting and re-engineering — represent our best ways to gather information and make corrections midcourse when unforeseen requirements surface. The result is an inordinate number of misses and miscues. We are left wondering and scratching our heads over why the changes didn't work out the way we planned.

LeBleu and Sobkowiak are managing partners at Software People Concepts, Inc., a consulting firm in New Haven, Conn.



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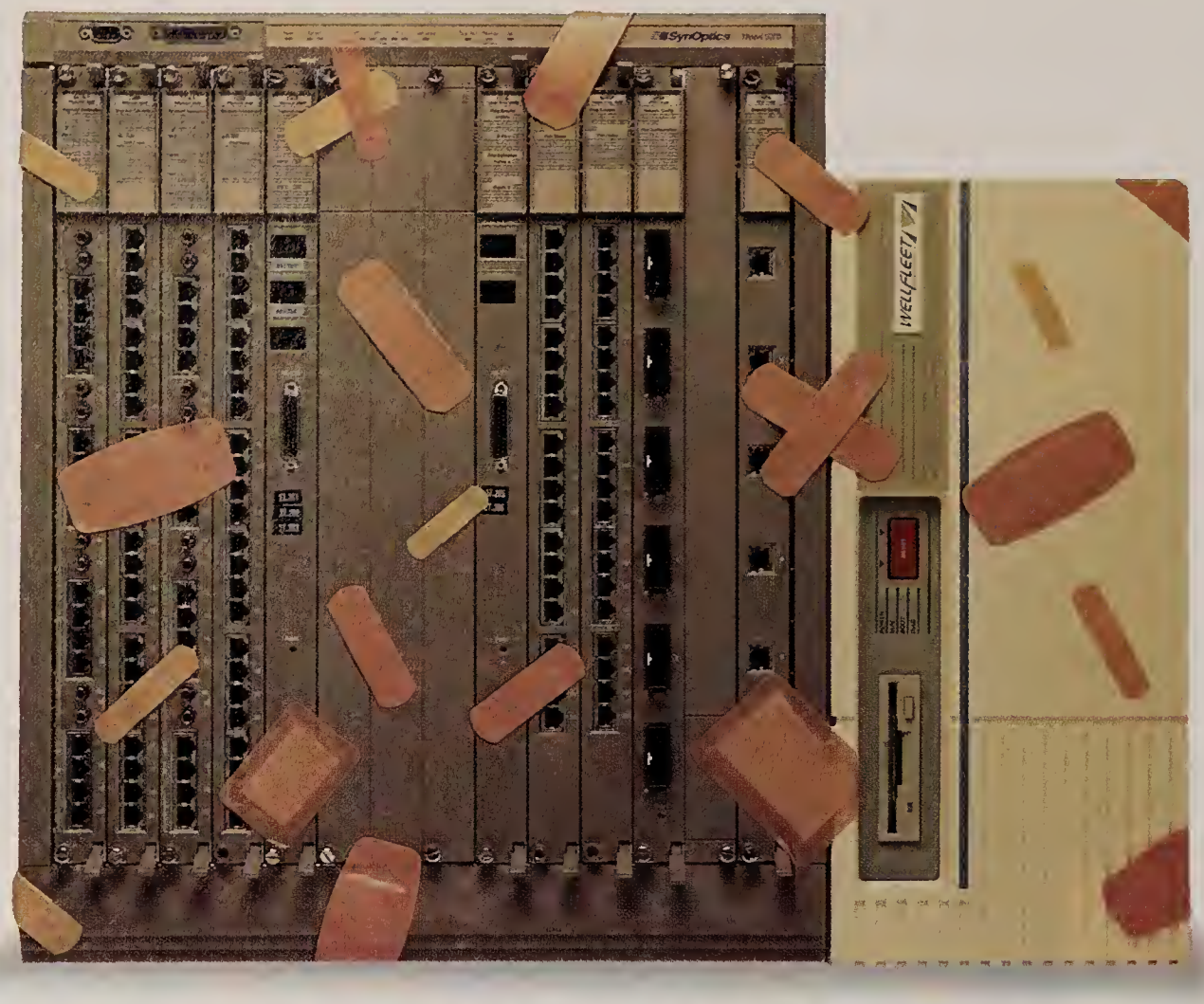

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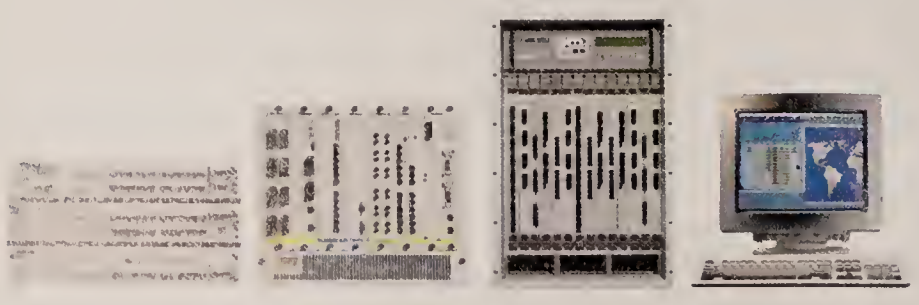

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On-line services

Internet support soars

Vendors see promise as marketing channel

By Jaikumar Vijayan

When Dell Computer Corp. went on-line with its World-Wide Web Internet server in July, even it was not prepared for the tremendous response the server would generate.

Dell has received more than 250,000 "hits" from users around the world, on issues ranging from technical support to new product information. In August, when Dell launched a line of notebook computers, the company fielded a staggering 16,000 queries in just one day.

"Since then, no other day has had even remotely the same number of hits," a company spokeswoman said. "But the response has been very good."

New frontier

This interest is prompting Dell and other leading desktop vendors to examine the possibility of increasing and extending technical service and support from traditional on-line services, such as Prodigy, America Online and CompuServe, to the Internet, analysts said.

"Vendors are beginning to realize that [the Internet] has the potential to become a significant marketing channel in the near future," said Joyce Gavenda, an analyst at Summit Strategies, Inc. in Boston. Gavenda said vendors are likely to leverage this potential by initially offering technical service, support and advice on the Internet and then converting and expanding this to a more active sales role.

"If vendors can get people to come into their service and support areas [on the Internet], it gives them an opportunity to make people aware of other products and services they have to offer," Gavenda said.

Bliss Bailey, a network services specialist at Auburn University in Auburn, Ala., agreed. The university, whose primary vendor is Sun Microsystems, Inc., accesses the company's SunSolve Internet server with queries, requests for technical information or product updates.

"In general, support on the Internet has worked very well for us," Bailey said. "For specific technical issues, we simply call in with our queries, and the vendor responds via E-mail on the Internet. There's no more playing telephone tag."

There are indications that several major vendors have already begun to look seriously at the Internet as a channel for service, support and, eventually, sales.

Last week, Compaq Computer Corp. became the latest of a growing number of vendors to offer technical service and support over the Internet. By dialing into Compaq's World-Wide Web server, us-

Internet, *page 46*

Minisuites boast low price, synchronized upgrades

By William Brandel

It didn't take a rocket scientist to figure out that having four or five applications share the same menu functions would greatly appeal to users. But has anyone figured out what to do if end users won't give up the one separate application that does not fit into one of the major suites?

Some vendors are taking a stab at this by rolling out bundles, or minisuites, targeting users who would like to mix and match their suite options. At the same time, users may enjoy the lower prices and integrated functions these applications employ.

For example:

- Lotus Development Corp. has introduced an integrated bundle of its 1-2-3 spreadsheet and its Approach 3.0 database.
- AutoDesk, Inc. has renovated its Special Editions bundles based on AutoCAD. The company will now market bundles of its applications such as facilities management or mechanical design with AutoCAD.
- Superbase, Inc. has rolled out a bundle, called SuperSuite, that includes the Superbase database and other database tool applications.

Pro and con

The economic benefits of buying these applications is clear. If a user upgrades to the Lotus bundle from a spreadsheet or database — as most would — he receives for $149 two major applications that usually carry a list price of almost $1,000.

However, while price plays a role in applications purchases for information systems departments, it is not what matters most to end users.

"End users are really weird about changing the way they do things," said Stacy Myers, a staff environmental analyst at Southern Florida Water Management District in West Palm Beach, Fla.

For example, Myers said he thought the most logical way to upgrade his users' applications was to buy Lotus' SmartSuite. However, he ran into stiff resistance from a devout WordPerfect for DOS user population that was reluctant to give up the word processor they knew well.

In an effort to satisfy the end users, Myers is now trying out different databases, such as Borland International, Inc.'s Paradox for Windows, Microsoft Corp.'s Access and the Lotus 1-2-3/Approach bundle, to find the right chord.

The idea of minisuites might hit the right chord with the market at large, said Jeff Tarter, editor of "Soft Letter," an industry newsletter in Watertown, Mass. For vendors, the time is right to hit the market with these bundles.

"For one, users are tired of having to upgrade application suites each time a product is refreshed within the suite," Tarter said. As a result of vendors such as Lotus synchronizing their upgrades as well as menu structures, vendors can much more easily blend two applications.

Lotus sees the potential for other market opportunities, said Paul McNulty, director of product marketing for desktop products. While the company is targeting the analytical end user with the spreadsheet/database bundle, there are opportunities for targeting other users with bundle arrangements using different products, he said.

This vertical user target approach is now be-

Minisuites, *page 46*

Improved connections, on-line helpers distinguish Paradox 5.0

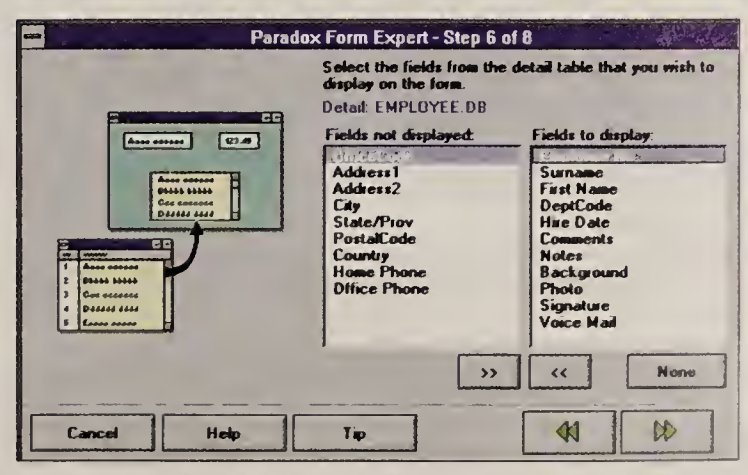
By Jeff Angus

The promise of Paradox, now in its third Windows rendition, remains the same: You don't have to trade development productivity for sophisticated functionality.

To improve ease of access to the complex number of features that the Borland International, Inc. database offers, Version 5.0 comes with a new Project Viewer that centralizes access to Paradox's various objects. The feature automatically catalogs all tables, queries, forms and reports and makes them available in icon-identified folders. This replaces the cumbersome single folder that contained everything in one window in the previous version.

PRODUCT test DRIVE

For heavy-duty database work, you'll find much to cheer. For one thing, Version 5.0 boasts improved connections. By virtue of Borland's new SQL Link 2.0 for Windows, Paradox now automatically translates Windows query commands into the appropriate SQL dialect for database servers, including products from Oracle Corp., Sybase, Inc., Microsoft Corp., Informix Software, Inc. and Borland's Interbase. SQL Link is available free to Paradox 5.0 purchasers through a coupon that comes with the product.



Paradox 5.0 *comes with a new Project Viewer that centralizes aeeess to Parador's various objects*

Paradox 5.0's implementation of Integrated Database Application Programming Interface (IDAPI), Borland's own API architecture, provides Open Database Connectivity compliance through drivers that are available separately. This added capability means you should be able to connect to IBM DB2 and AS/400 and Microsoft Access files, as well as a number of others.

Version 5.0 is also now Object Linking and Embedding (OLE) 2.0-compliant as a server and a container application. Our testing of the link and embed operations worked well, if you don't mind the sluggishness OLE imposes on operations.

OLE integration is only one of the nods Borland gave to its chief competitor, Microsoft. Like Microsoft's Access database, Paradox 5.0 now has ease-of-use on-line "helpers" called Coaches and Ex-

Paradox, *page 48*

Mac Office suite disappoints

Overhead, changes draw ire

By Mark Halper

After months of twiddling their office software thumbs while Microsoft Corp. readied a Macintosh version of its latest Office suite, some Apple Computer, Inc. users are saying the product wasn't worth the wait.

Power Macintosh users in particular were looking forward to the new suite because Power Macintosh lacks software written to take advantage of its PowerPC processor.

Microsoft knew when it announced Office 4.2 for Macintosh and Power Macintosh that users might be unnerved by the recommended minimum of 35M bytes of storage and 8M to 16M bytes of RAM. For that reason, Microsoft has been shipping the suite with RAM doubler software from Connectix Corp. in San Mateo, Calif.

While users expressed a begrudging acceptance of Office 4.2's large overhead soon after the announcement, some are voicing disappointment now that they have received the product and are faced with memory and storage upgrades. Some also are complaining about changes in Office's interface.

"I'm going to start buying stock in memory companies," said John Grabrick, an information engineer at 3M Co. Office's installation requirement is a deterrent to upgrading older systems, although it is more palatable on new systems because hard drive prices are declining, he said.

"We're very disappointed in the size and everything," said Greg Chirichigno, a systems analyst at Lockheed Corp. He said a minimum configuration of Word alone requires 10M bytes of disk space.

That voluminous requirement is indeed a problem, he said, because many of Lockheed's 200 680x0-based Macintoshes are still equipped with 80M-byte hard drives, so their minimum Office setups occupy 20% of their storage capacity.

"We're somewhat appalled by it, just the size of it," said Rex Levie, a technical systems specialist at Kaiser Permanente Health Plan, Inc. in Pasadena, Calif. Kaiser Permanente users are spending about $600 just to install Excel, he said.

Users noted that Microsoft would be well advised to strip out some features of Office that unnecessarily eat up system real estate, such as Word's Intellisense technology, which anticipates user behavior and automatically corrects spelling errors.

Microsoft group product manager Don Pickens said the company is offering less feature-intensive versions of Office 4.2. A "minimum" install on a 680x0-based Macintosh requires 18M bytes; a "full" install require 70M bytes, he said. He pointed out that the Macintosh version requires about 50% less system overhead than does a Windows version. But the new Macintosh version is larger than the Macintosh software it replaces, and Macintosh users could find that troubling because they tend to carry less storage than their Windows counterparts, Pickens said.

Shortcomings

Macintosh users find the following faults with Office 4.2:

- Large memory/ storage overhead
- Slow performance
- New user interface
- Inferior font-changing capabilities

What's missing

Macintosh users' complaints with Office 4.2 did not end with the systems requirements.

While Microsoft bundled too many features into the program, it also left out WYSIWYG font changing capabilities, said Bruce Gordon, project director at Walt Disney Imagineering in Glendale, Calif. Gordon likened that shortcoming to "stepping back 10 years in time." Pickens said users can still obtain the font capabilities by installing a template that ships with a full version of Word.

Levie said he found fault with Microsoft's decision to change the user interface on Word and Office's Excel spreadsheet from a Macintosh style to one that is more consistent with Windows.

"You learn to do things a certain way, and now without warning Microsoft has decided to drop the Windows interface on you. It gets a little confusing," he said. "The learning curve is going to be steep." Pickens said Microsoft wanted to keep the interface consistent with Windows because 90% of companies running Macintoshes also run Windows machines.

Grabrick complained that the new Excel for Macintosh requires a different set of keystrokes for various procedures, such as saving, than does Excel for Windows.

Furthermore, Grabrick said Excel has been running slower on his Power Macintoshes than on some 486- and Pentium-based systems.

Gordon had a similar assessment of Word 6.0, calling its performance "incredibly slow" on his 68030 systems. Pickens said Word can run slowly on 68030 boxes or if the user is using hundreds of fonts. Conflicts with the Macintosh's "init" resident programs can also slow performance, he said.

Apple user Matt Ghourdjian, national director of technology at Los Angeles law firm Howrey & Simon, came to Microsoft's defense, noting that users can knock down Office's memory and storage hurdles by removing many of the software's unneeded features. He added that early indications are that users at the law firm like Office's new interface.

NetWare support boosts Xylogics' Annex servers

By Ellis Booker

Bowing to the reality that few remote users dial into TCP/IP-based networks to the exclusion of all other network protocols, leading remote access server company Xylogics, Inc. in Burlington, Mass., earlier this month added support for Novell, Inc.'s NetWare across its Annex product line.

In addition to offering dial-in capabilities to NetWare, the new servers permit users on TCP/IP networks attached to the server to dial out from modem pools.

One welcome technical enhancement in the new release is a so-called "auto detect" feature, whereby the server dynamically adjusts to an incoming call's protocol and display configuration.

"It means you don't have to figure out and dedicate access ports ahead of time," said Jack O'Neil, Xylogics vice president of marketing.

Jim Knoll, network administrator at Centron Co., a computer leasing company in Eden Prairie, Minn., does not use the multiple protocol feature on his Annex but says, "we are doing dial-out across IPX to get a modem pool."

That alone has freed Knoll from a number of administrative hassles. "In the past we'd had to put a modem on everyone's desk — and worse yet, get a line at everybody's desk," he said.

The auto-detect feature also means that modem pools can be general purpose: Users dialing out from Novell IPX or TCP/IP networks do not have to redial unique port numbers to reach Unix or NetWare hosts. In addition, users can maintain simultaneous Novell IPX and Internet Protocol sessions through the Xylogics server.

Annex server customers can upgrade via software for as little as $495, depending on hardware platform and feature set. Pricing for the Annex family of servers ranges from $2,270 for an eight-port unit to $14,185 for a 64-port unit.

Internet

CONTINUED FROM PAGE 45

ers with Internet access can access a wide range of Compaq technical literature, product information, software patches, drivers and upgrades, which they can download for free.

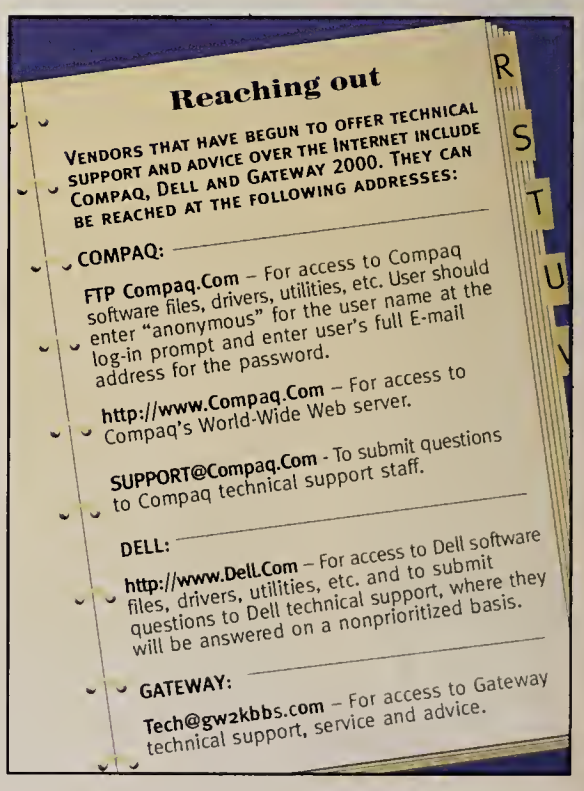
Specific technical questions can be directed throughout the day via electronic mail to Compaq technical staff, who respond to the queries in a nonprioritized manner.

Having launched the program barely a week ago, Compaq has already fielded queries from more than 30 countries. "That surprised me," admitted Gus Kolias, Compaq vice president of customer service and training. "It's an indication of how broad the reach is."

Dell will soon pilot an effort to offer sophisticated subscriber-based Internet support in addition to the informal support it already offers Internet users, according to a company spokeswoman.

Similarly, firms such as Gateway 2000, Inc., IBM PC Co., Digital Equipment Corp. and Hewlett-Packard Co. already have informal user groups and World-Wide Web servers on the Internet, with technical support staff to field queries.

For just the cost of the access time, users can log in to any of these servers and user groups and gain access to a wide variety of information, including technical libraries, product catalogs and service information.



Minisuites

CONTINUED FROM PAGE 45

ing employed by Superbase, Software Publishing Corp. and AutoDesk. However, these vendors are not only bundling their own software, they are also taking discrete applications developed by very small vendors and giving them exposure they would otherwise not receive.

For example, AutoDesk is bundling AutoCAD with companion products — ranging from mapping to mechanical surface modeling — from other vendors.

For software vendors, the integration and the economics of bundling have become a competitive fact of life.

"It's a logical business case," said Rob Savette, president of Superbase. "We need a bundle to compete and gain entree to accounts, and the smaller vendors need the access to the suite. At the same time, we both add value for the customer. It's a win-win-win."

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NetWare

Firms flock to Pentium clone

NexGen processor likely to spur spate of options

By Jaikumar Vijayan

In what analysts said was a substantial step forward for the company, Pentium clone maker NexGen, Inc. recently announced a list of more than 20 companies — 17 of them in the U.S. — that plan to build desktop systems based on its NX586 processor family.

The Milpitas, Calif.-based company also announced full-volume production of four processors in that family, including 90- and 100-MHz Pentium-class chips. Manufactured by IBM Microelectronics, the new processors top out with the NX586-P100, which runs at 93 MHz but matches the performance of Intel Corp.'s 100-MHz Pentium processor, according to NexGen.

The announcements mean price-conscious users can expect to see a steadily growing number of low-cost Pentium-class options hitting the market well before Christmas, observers said.

"Initially the numbers are not going to be very high ... probably around 100,000 or so, but it won't be unreasonable to expect NexGen to manufacture about 500,000 chips next year," said Tony Massimini, an analyst at In-Stat Research in Scottsdale, Ariz. This could result in a flood of Pentium-class desktops priced at less than $2,000, he said.

Already, for instance, Tangent Computer, Inc. in Burlingame, Calif., has announced shipments of systems based on the NexGen processors that are among the lowest priced in the class, analysts said. For example, Tangent's TC NX-80 model, which is based on NexGen's P80 processor, offers 8M bytes of RAM, a 340M-byte drive, a 1M-byte local bus graphics accelerator, 256K cache, a dual-speed CD-ROM and a monitor for $1,999.

Several other vendors are expected to announce similarly priced products before year's end, said David Kulbarsh, NexGen's director of marketing.

So far approximately 30 OEMs have announced plans to ship products around NexGen's processors, though no top-tier vendors have done so yet. Analysts, however, said NexGen could attract the attention of major vendors as it ramps up production.

"Several of the Top 10 vendors are trying to move away from their dependence on Intel" and could begin looking at alternatives from companies such as NexGen, said Jennifer Munson, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

For example, Compaq Computer Corp., which has provided funds for the start-up, "is probably looking at it right now," she said.

Paradox

CONTINUED FROM PAGE 45

perts to boost productivity for less-experienced users.

Coaches, like Access' Cue Cards, are sequentially programmed pages of simple instructions you flip through while working with your own data. Experts, like Access' Wizards, respond to questions to guide you in building form, reports or mailing labels.

Paradox's Coaches are excellent training wheels you can dispose of once you've mastered the process.

The Experts present both good and bad news. This version does not provide a lot of them, and they perform a limited number of tasks, though the ones they provide seem well-chosen. The good news is that the construction of Experts is documented. As a developer, you can produce your own Experts for end users to work with on your applications. It seems likely we'll see third-party developers offering aftermarket Experts for this popular program.

Version 5.0's performance is noticeably improved. Developers will appreciate the slimmer memory requirements. An 8M-byte system will still handle the program more comfortably than a 4M-byte one, but unlike its predecessor, 5.0 frees Windows memory resources as it completes the tasks requiring them. Borland says 5.0 runs queries and reports up to three times faster than Version 4.5.

The underlying power for creating multitable queries and reports is unrivaled, although much of that power may be inaccessible to you until you've mastered some complex concepts and keystrokes. You will find the on-line help and manuals adequate and well-indexed. On-line help has been redesigned so users no longer have to search through independent help systems for Objectpal, Paradox's object-oriented programming language and general help.

Version 5.0 also has a new feature that should have been there all along: a filter that temporarily blocks out data you don't need to see. There's also a new timesaving feature: You can edit a table's data from within a query. This makes sense because frequently you can't decide on a table's contents until you see it joined with other tables, and this gathering is logically done in a query.

There are only minor tactical incompatibilities between 5.0 and the previous version, documented in the README file. I strongly recommend you read and act on *all* the information in that file. Technical support, via a toll line, was knowledgeable, polite and prompt.

Paradox for Windows 5.0 lists for $495; the competitive upgrade price is $199.95. Upgrades from previous versions cost $179.95. Borland's information number is (800) 233-2444 x1227.

Angus is a project director at Data Works Ltd. in Seattle.

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Users find it too soon to fret over Windows 95 conflicts

By Ed Scannell

Like the roll of distant thunder, the anticipated collision between all the built-in utilities expected in Microsoft Corp.'s Windows 95 and products already on the market is not a problem most information systems shops expect to worry about any time soon.

For some time, industry observers have speculated that built-in functions such as peer-to-peer networking, universal mail clients and immediate access to on-line services would be difficult to manage remotely or would cause conflicts with existing product standards.

But users and other observers say they are still not sure what Microsoft plans to put into the final release of the next version of Windows. As a result, they are not seriously considering swapping out any products in favor of those built into the operating environment.

"In the larger accounts no one is thinking much about those issues until they are sure about what will be in the final release. Right now they are more concerned about things like will it take [4M or 8M bytes] to run it,'" said Frank Dzubeck, president of Communications Network Architects, Inc., a consultancy in Washington.

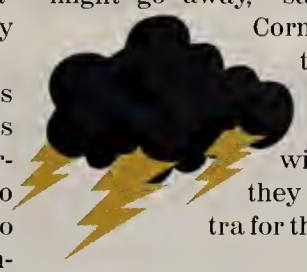
Too little

Microsoft's inclusion of a variety of built-in network and application features for free is not enough to sway larger accounts to migrate hundreds of users. These programs must stand up feature for feature with whatever applications users have in place.

"Many users already have an E-mail package or network that probably works OK and so will be reluctant to give it up automatically, even if it is for free," said Jerry Schneider, president of consultancy Schneider Associates, Inc. in Burke, Va., and former president of the Capitol PC User Group in Washington. "At least not until they see it is better than what they have."

Some users acknowledge, however, that some utilities companies, such as Symantec Corp. with its Norton Utilities, will have to work a lot harder to stay a step ahead of Windows 95.

"Some utilities users have licensed, like Norton Desktop for Windows, may not make much sense now. Some of those might go away," said consultant Bill Cornfield, president of the Windows User Support Group in New York. "Users will stop to think if they still want to pay extra for these things."



Windows worries

Possibly of greater concern to IS, according to industry observers, is whether Windows 95's utilities will let users wander too freely on corporate networks and access data they should not.

Another concern some have had about widely deploying Windows 95: the systems tools and utilities necessary to distribute, manage and otherwise control hundreds of desktops safely from remote locations.

But with Microsoft's recent delivery of Windows NT 3.5 and Systems Management Server (SMS) close to final delivery (see Firing Line page 114), users are generally feeling more comfortable about how they might deploy Windows 95 enterprisewide and still maintain control.

Fears about having to bolster technical support to prepare for that deployment and for remote management of Windows 95 appear to be softening as well. With some IS shops feeling more confident about what their LAN administrators can do with Windows 3.5 and SMS, some said they expect their support costs will actually decline and that they will require fewer technical support people.

"We still believe that [Windows 95] should lessen the nightmares that keep LAN administrators up nights," said Warren Smith, a certified IS auditor in Pacific Bell's auditing department. "We also think it will reduce our number of LAN administrators."

Sound and color

Microsoft will include more utilities in the next beta version of Windows 95, expected in early November. These include Radish Communications Systems, Inc.'s VoiceView and Kodak, Inc.'s True Color.

Briefs

Home computer tops TV

Computers have replaced the television set as the dominant information appliance in some homes, according to a survey of 1,200 purchasers of **AST Research, Inc.**'s home computers. The study, conducted by AST, suggests that the average home computer user uses the computer an average of 13 hours a week and watches about nine hours of prime-time TV.

Motherboard gets upgrade

Reply Corp. in San Jose, Calif., has announced a 16-bit upgrade motherboard for users of IBM's PS/2 Model 70, microchannel systems that upgrade the system to a 50-MHz Intel Corp. I486. Prices start at $495.

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And speaking of the future, our 3-year Limited Warranty† covers a few things that other warranties conveniently overlook. Like your monitor, NICs and peripherals.

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You won't be expected to get rid of the old PC either. We can clean off its hard drive, remove its asset tag and physically haul it away.

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New Products

DataDisc, Inc. has announced DataDisc CDR4X, a quadruple-speed CD-ROM recorder.

According to the Gainesville, Va., firm, the Plug and Play-compatible package is a half-height unit that allows users to make a CD-ROM in 15 minutes. It can be installed in a PC or Macintosh. An external unit is also available.

The product comes bundled with DataDisc's DiscMaker Premastering/Mastering software, a SCSI card, a SCSI cable and 10 blank CDs.

DataDisc CDR4X costs $5,995.

▶ *DataDisc*
(703) 347-2111

Host Interface International, Inc. has announced Double Image 2.1, copy and backup software for optical discs.

According to the Bellevue, Wash., firm, Double Image 2.1 features reduced copy time and intelligent copying that updates only those files or parts of files that have changed on a write-once read-many drive.

Run options include maintaining a log of all copy activity, the ability to prevent older files from being copied over newer files and copying files based on file date or time ranges.

Double Image 2.1 costs $349 for DOS and $449 for Windows.

▶ *Host Interface International*
(206) 746-4361

Vermont Research Corp. has announced Stealth Cache, a 5¼-in. SCSI caching subsystem.

According to the North Springfield, Vt., company, the Stealth Cache delivers more than 1,000 queuing input per output of data per second.

The product can support one internal and up to seven external SCSI disk drives. Stealth Cache appears transparently at the SCSI addresses of multiple drives attached to the unit and emulates individual commands to the drives that it caches.

Prices start at $7,495.

▶ *Vermont Research*
(802) 886-2256

2010 Software Corp. has announced Sherlock 4.0 document management software.

According to the Hasbrouck Heights, N.J., company, Sherlock 4.0 saves and retrieves documents up to 500% faster than previous versions and supports 90% of all Windows applications.

The product features a drag-and-drop user interface, a compatibility utility for customization of applications and application upgrades, instant multiple application and document launching and user-customized fields.

Sherlock 4.0 costs $179.

▶ *2010 Software*
(201) 288-7100

Apex Data, Inc. has announced the MultiCard, a Type II PCMCIA card.

According to the Pleasanton, Calif., company, the MultiCard features concurrent operation and multitasking capabilities.

Users can remain logged on to a network from a remote site while sending and receiving data files and faxes. MultiCard supports both 10Base-T and 10Base-2 installations and OS/2, Windows, DOS and Novell, Inc. environments.

The MultiCard costs $549.

▶ *Apex Data*
(510) 416-5656

Spectrum Signal Processing, Inc. has announced OfficeFX, Envoy II and SoundChoice 32, Windows-based multimedia PC cards.

According to the Burnaby, B.C., company, the cards provide combinations of telephone management, voice and data communications, audio functions and Internet interface features in integrated packages.

OfficeFX features fax and modem software, telephone answering and communications software, audio and electronic-mail software. Envoy II provides complete control of all communications including fax, modem and telephone management. SoundChoice 32 provides CD-quality audio with 16-bit stereo sampling and recording.

OfficeFX costs $349, Envoy II costs $199, and SoundChoice 32 costs $199.

▶ *Spectrum Signal Processing*
(604) 421-5422

Product shorts

Mega Drive Systems, Inc. has introduced the Mercury 4.2G-byte Superfast Drive, a 3-in. removable hard drive. The drive uses an internal 1M-byte cache and contains built-in support for fault tolerance, redundant arrays of inexpensive disks and network environments. Cost: $3,999. Mega Drive Systems, Beverly Hills, Calif. (310) 247-0006. . . . **Sony Electronics, Inc.** has announced the CDU55E and CDU55S, double-speed internal CD-ROM drives. The drives provide multisession Photo CD compatibility and 256K-byte buffers. The CDU55E features an AT Attachment Packet Interface and easy installation on a variety of computer platforms. The CDU55S is a SCSI-2 drive with a sustained data transfer rate of 410K bit/sec. Cost: The CDU55E costs $199, and CDU55S costs $259. Sony Electronics, San Jose, Calif. (408) 432-0190.

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- 13. Treasurer, Controller, Financial Officer

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- 51. Sales & Mktg. Management
- 70. Medical, Legal, Accounting Management

OTHER PROFESSIONAL MANAGEMENT
- 80. Information Centers/Libraries, Educators, Journalists, Students
- 90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems
- (a) Solaris
- (b) Netware
- (c) OS/2
- (d) Unix
- (e) Mac OS
- (f) Windows NT
- (g) Windows
- (h) NeXTstep

App. Development Products ❑ Yes ❑ No

Networking Products ❑ Yes ❑ No

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- 70. Mining/Construction/Petroleum/Refining/Agric.
- 80. Manufacturer of Computers, Computer-Related Systems or Peripherals
- 85. Systems Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
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- 70. Medical, Legal, Accounting Management

OTHER PROFESSIONAL MANAGEMENT
- 80. Information Centers/Libraries, Educators, Journalists, Students
- 90. Other Titled Personnel

3. Do you use, evaluate, specify, recommend, purchase: (Circle all that apply)

Operating Systems
- (a) Solaris
- (b) Netware
- (c) OS/2
- (d) Unix
- (e) Mac OS
- (f) Windows NT
- (g) Windows
- (h) NeXTstep

App. Development Products ❑ Yes ❑ No

Networking Products ❑ Yes ❑ No

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Commentary

David Coursey

Upside of Novell's downturn

Novell customers should be both happy and concerned about what is happening in Utah these days. Novell has finally crashed, which is good news because it was bound to happen. At least by happening now it represents more of a technological and intellectual bankruptcy than a financial one. This is a case where being reasonably well-off but not very smart is vastly preferable to being a broke genius. Novell needs time — which money can buy — to solve its many problems.

In Frankenberg's hands

The current situation, in which Novell has appeared to be running amok for eight or nine months, can be corrected if Novell Chairman/President/CEO Bob Frankenberg is as smart as I think he is. In fact, by charting a new path for Big Red, Frankenberg might just give customers the networking vendor they really need.

Here's what Frankenberg must do:

• **Stop cuddling up to Mierosoft.** Yes, there are areas in which the two companies need to work together. But there are more areas in which they need to compete, and letting the press declare "detente" between Redmond and Provo sent the wrong message.

After reading those detente stories, my mind turned to British Prime Minister Neville Chamberlain's return from Munich after his 1938 meeting with Hitler. I imagined the Novell corporate jet landing in Provo and Frankenberg stepping out of the plane, clutching an envelope containing a piece of paper with some vague promises from Microsoft. Having declared "peace in our time" to an anxious crowd — all crowds in Utah Valley are anxious these days — Frankenberg heads off to Novell headquarters to RIF some second-level managers as part of the big reorganization.

Declaring detente with Microsoft seems a bit like trying to convince a hungry tiger that you don't look like a meal. As soon as you turn your back, the tiger pounces, and you're lunch. The tiger isn't bad for turning you into a light summer repast; predators do those sorts of things. It's their nature.

Such a detente with Microsoft is something else: unilateral surrender. Don't do it.

• **Novell must become an open systems eompany.** It should embrace the entire non-Microsoft world, including non-Novell flavors of Unix, then connect this

Coursey, *page 63*

Brokerage firm ditches big iron for PC network

By Stuart J. Johnston

How do you eliminate expensive mainframe costs at a major insurance brokerage firm while giving its work force broad access to mountains of data? Should you dump the mainframe and replace it with a network running PC-based applications?

John L. Wortham & Son LLP in Houston is. Much of its rationale lies in Borland International, Inc.'s new versions of dBase — dBase 5.0 for DOS and dBase for Windows, according to Don Kranz, database administrator at the firm. The brokerage is replacing its mainframe applications with networked PC applications built using the two packages. Between 40% and 60% of the applications have been moved already, Kranz said.

Savings from the start

Initially, the company was able to gain substantial savings by moving all print functions to the network.

"What we started doing about a year and a half ago was getting rid of the mainframe, [and we've] eliminated a mainframe printer and saved a substantial amount in maintenance costs just on off-loading our printing to the network," Kranz said.

The company has not yet calculated the savings from off-loading any of its insurance applications to PCs.

The brokerage has been deploying a variety of dBase applications across its networks. These include applications for personnel, letter writing, issuing insurance certificates and management reporting. "We're ready for the downhill run" to finish off-loading the rest of the applications, Kranz said. The mainframe, a Burroughs Corp. machine, should be gone sometime next year, he said.

ON SITE

John L. Wortham & Son
Houston

Challenge: To give its work force greater access to large amounts of data.

Strategy: Replace mainframe-based applications with networked PC applications built with Borland's dBase.

Results: Significant savings from off-loading print functions to network, including maintenance and purchase of standard white paper. Additional savings and faster, more flexible access to data are expected as more applications go on-line.

A step ahead

John L. Wortham's move to client/server has been something of an odyssey. The company has been using dBase for about 10 years, although in limited applications, said user David Rogers, an associate partner at the firm. "It started off in very narrow areas, and we're at the point now where we'll be doing the majority of our processing in dBase," Rogers said.

Prior to moving insurance certificate reissuance applications off the mainframe, users were forced to go through an entire form, even when only a few fields needed to be changed. Now users can jump from place to place, speeding up the process of filling out the forms on-line.

Additionally, dBase allowed the company to normalize the databases, compressing the amount of data that must be stored and ac-

Brokerage, *page 61*

Local-area networks

Billing app gets heavy network users to pay up

By Steve Moore

■ **Charging headlong into the politically sensitive area of who pays for what in the LAN environment, Concord Communications, Inc. last week released a network billing application that enables network managers to track LAN use and charge back costs to end-user departments.**

The new application is part of Concord's Trakker family of network management software.

"We've been in the dark age of usage accountability for LANs, and now this [billing application] will help companies understand whether they're using their network resources in the most effective way," said Jill Huntington-Lee, a principal consultant at Brandywine Network Associates in Cinnaminson, N.J.

But chargeback is "a politically sensitive issue" because it can anger heavy network users, said Dwight Lubansky, a senior engineer at Ciba Pharmaceuticals in Summit, N.J. While he is not yet using Concord's billing application, Lubansky said the day will come "when we'll have to justify major network modifications and upgrades to our paper pushers — not just technically, but through billing reports."

Billing reports can be given to senior executives who need ammunition to fight budget allocation battles, he noted.

"It's exciting that a smaller company like Concord has the ears of higher-level decision-makers," said Charles Robbins, a consultant at Aberdeen Group in Boston. He observed that "people who don't worry about [network] segment balancing do worry about cost allocation."

Balancing act

Lubansky said he is concerned about cost allocation and network balancing. Concord's network balance application will save time previously spent manually generating and comparing Trakker reports on bandwidth utilization for LAN traffic, he said.

"We have many users who are scientific researchers, and they often use the network differently than they propose their utilization to be," Lubansky said. "It's a tool to let us know how our network is changing and how traffic is flowing from one segment to another."

Robbins said the balance applications can also help network managers determine when they need a higher-speed LAN or if they have too many devices on a LAN.

Future Trakker applications will be able to read Remote Network Monitoring and Desktop Management Interface data, said Kevin Conklin, vice president of marketing at Concord in Marlboro, Mass.

Concord's Billing and Network Balance applications cost $7,500 and $3,000, respectively.

Sterling expands file transfer

By Elisabeth Horwitt

Two recent product introductions by Sterling Software, Inc. promise to fill some important gaps in two niches of the file transfer market.

Conneet:Direet for NetWare is reportedly the first Novell, Ine. NetWare Loadable Module that manages bulk file transfer between NetWare 3.x servers and a variety of IBM host and Unix systems.

Direet:Mailbox for Unix is said to provide a seeure environment for eompanies that want to set up a Unix server as a repository for ineoming eleetronie data interehange (EDl) transmissions, partieularly over the less-than-seeure Internet.

Conneet:Direet for NetWare reportedly enables users to set up automated distribution of files or applieations aeross multiple servers. For example, using the produet's seripting language, an information systems manager ean set up an applieation to extraet data from a host database and download it into a NetWare database, a Sterling spokesman said.

Great Western Bank is eurrently using a beta version of the produet to download new releases of teller applieation eode from an MVS host to NetWare 3.x servers at braneh offiees. The idea is for the NetWare link to replaee a host-to-PC link for downloading the eode, said Randy Green, senior programmer at the Northridge, Calif., finaneial firm. "Right now, we need a stand-alone PC in eaeh braneh just to reeeive the eode; we want to get rid of it," he said.

The bank eould move files to NetWare before, but with Conneet:Direet for NetWare, Great Western ean take advantage of the automation, seripting and systems management it uses on the host version of the produet, Green noted.

Many versions

The Conneet:Direet family is based on Network Data Mover, a bulk file transfer produet that Sterling in Irving, Texas, aequired with Systems Center, Ine. Other versions, whieh interaet with the NetWare offering, manage data transfer on IBM MVS, VM and ESP mainframes, AS/400s and Unix systems.

Giant leap

U.S. revenue generated by the providers of TCP/IP-based access services to the Internet is expected to jump from $118.8 million in March 1994 to more than $300 million by March 1995, according to a recent Maloff Co. report. The top providers (as of March '94) were Performance Systems International, UUNet/Alternate and U.S. Sprint.

The NetWare version works with Novell's NetWare for SAA host gateway. It initially supports NetWare 3.12 and NetWare 4.01 in bindery mode. Conneet:Direet will support both NetWare 4.1 and the NetWare Direetory Services when NetWare for SAA does, a Sterling spokesman said. The next version of NetWare for SAA, due out early next year, will have that support, a Novell spokesman said.

Prieing for Conneet: Direet for NetWare begins at $1,760 for a two-session, two-user version.

Sterling said Conneet: Mailbox for Unix is a "downsized version" of Sterling's original SuperTraks data repository produet for IBM MVS and VM hosts. The software reportedly sets up a Unix system as an EDI server that eolleets and distributes doeuments eoming in from business partners over wide-area links. It supports the File Transfer Protoeol (FTP) for Internet-based firms.

A key feature of Conneet:Mailbox for Unix is its ability to safeguard against unauthorized people using the EDl server to break in and aeeess the rest of a eompany's systems and data, the Sterling spokesman said. While the nonseeured FTP protoeol "lets you get at any file you have aeeess to," with Conneet:Mailbox, FTP users ean get only as far as the repository and not to the rest of the eompany's files, he added.

Internet security

Sterling has put its finger on a need that will beeome stronger as more businesses set up shop on the Internet, said Joel Maloff, president of The Maloff Co., an Ann Arbor, Mieh., eonsultaney. While the eoneept of a repository to limit outside user aeeess seemed a good one, some questions remain, sueh as how long will it take the system to sean eaeh file for viruses before sending it on, he said.

There is also the question of expense — for the software itself and the system it must run on, Maloff said.

An entry-level Conneet:Mailbox for Unix eosts $2,150 for two sessions, with priees inereasing for more eoneurrent data transfer sessions. It supports bisynehronous, asynehronous and TCP/IP-based eonneetions. It runs on The Santa Cruz Operation's Unix with Intel Corp. 80386 and I486-based platforms, Hewlett-Paekard Co.'s HP 9000 700 and 800 series and IBM RS/6000s running AIX 3.2.

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Brokerage firm ditches big iron

CONTINUED FROM PAGE 59

cessed, thus speeding the process further.

For example, one database that took up about 9M bytes on the mainframe now takes up about a third of that on the PC network. "When you're using less space, it goes faster," Kranz said.

"Each certificate has about 20K bytes of data, so you're looking at a lot of data," Kranz said. "The [dBase 5.0 for] DOS product was unbelievably fast, so we chose it for a lot of batch processes."

> "[We] saved a substantial amount in maintenance costs just on off-loading our printing to the network."
>
> —John Kranz
> Database administrator
> John L. Wortham & Son

Different versions

Most of the firm's systems so far have been deployed using the DOS version. However, the company just began rolling out to a small group of users the first of several applications built on the Windows version.

Kranz cited the products' stability and reliability as reasons why the firm went with dBase instead of some of the other products that are available, such as Microsoft Corp.'s FoxPro and Access database management systems. The company, which does business worldwide, also chose dBase because of its industry-standard .DBF file format. "We can send a file anywhere in the world, and they'll be able to work with it," Kranz said.

When it came to development, the compatibility with previous versions of dBase as well as between the DOS and Windows versions scored high with Kranz and Rogers.

"What I like about dBase for Windows is it's still dBase," said Rogers, who has used dBase for years and does some of the firm's application development.

Kranz echoed that sentiment. "The Windows product is very compatible with the DOS product, so you can develop [an application using the Windows environment] and then migrate the code back to the DOS environment," Kranz said, citing the better performance under DOS.

The performance of the DOS product is an important consideration for the firm. While the company currently purchases 486-based PCs as its standard desktop machine, a number of 80386-based PCs still run on the brokerage's Novell, Inc. NetWare 3.12 networks.

Apps of choice

For central database application servers, the firm uses two 66-MHz Intel Corp. I486 machines with 32M bytes of memory and 9G-byte hard drives. Additionally, there are six departmental 486 servers with 16M bytes of RAM and 1G- or 2G-byte hard drives, as well as one print server for every eight users, Kranz said.

The firm does use a diverse selection of shrink-wrapped PC applications as well as some commercial business products such as insurance rating software, but the majority of the downsizing is being done with dBase.

Rogers said he expects dBase for Windows to improve in future releases and, overall, he has been very satisfied with dBase. "We've used it for so many years that I really hope it's there for another 10 years," he said.

Briefs

Great Plains ships suite

Great Plains Software announced that it has started shipping a suite of eight client/server financial applications for the IBM RS/6000. Great Plains' C/S+ software packages run on the IBM Unix servers and can be accessed by Microsoft Corp. Windows and Windows NT and Apple Computer, Inc. Macintosh client machines. Prices for the C/S+ applications range from $5,000 to $50,000, depending on the number of users who access the RS/6000 server, the firm said.

Novell denies reports

Novell, Inc. said printed reports that it plans to acquire workflow vendor **Reach Software Corp.** are incorrect. Novell does plan to get into the workflow market and may license Reach's technology or form a partnership. But it will will not acquire the company, a spokesman said. Reach officials would not comment.

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Unisys goes video

Videoconferencing entry called high quality, high priced

By Thomas Hoffman

■ Unisys Corp., an unlikely entrant to the nascent desktop videoconferencing market, recently introduced a system that many analysts said is among the most technologically sophisticated in the industry. Problem is, it is priced like a Rolls-Royce in a market of Yugo buyers.

Unisys' Desktop Videoconferencing System includes a high-performance compression and decompression board that uses industry-standard algorithms to enable full-motion video. The system reaches 28 frame/sec. in 352- by 288-pixel resolution and can scale up to full-screen size at the same frame rates. But while the Ethernet LAN-based system can outperform most of the 8 to 10 frame/sec. Integrated Services Digital Network solutions on the market, it is also priced considerably higher than most systems, at $12,995.

The turnkey system includes an Intel Corp. I486-based PC and all the necessary hardware and software components, but the price tag is still $6,000 more than comparable systems on the market, analysts said. "Systems that include the PC and the LAN configuration equipment typically go for less than $7,000," said Sarah Dickinson, an analyst at Personal Technology Research Inc. in Waltham, Mass.

Other analysts were more blunt in their assessments. "Thirteen thousand dollars is a lot to swallow," said David Yockelson, an analyst at Meta Group, Inc. in Westport, Conn., who was briefed by Unisys. Based on feedback from Meta customers, Yockelson said most user companies are looking for solutions that are priced in the $2,000 to $3,000 per-seat range, excluding the typical $2,000 cost of a PC.

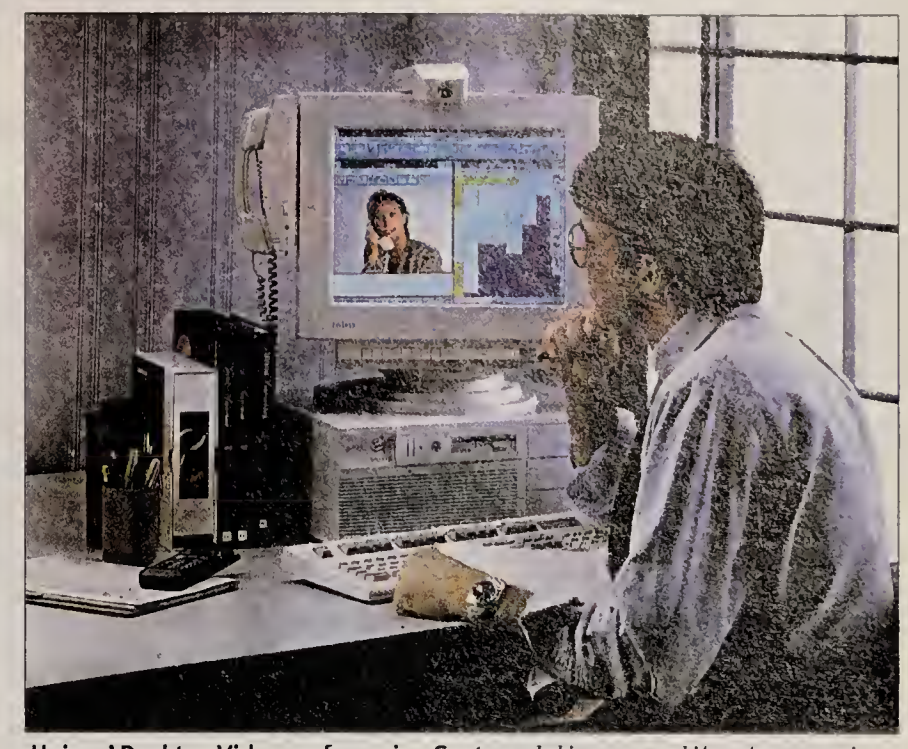
"Most people who are looking at videoconferencing already have powerful enough PCs in place and are looking to roll in affordable videoconferencing software. It's going to be a challenge for Unisys to push this," Yockelson said.

A market niche

Unisys is gambling that users, particularly boardroom types, will be willing to pay a premium for higher-quality video that eats up less network bandwidth. "We've looked at what's on the market, and we decided that the CEO of a Fidelity wants high-quality video and sound, not a Mr. Potato Head look and feel," said Reno Davenport, director of marketing at Unisys' client/server systems group.

Davenport may have a case for his argument. Fidelity Investments, the mutual funds giant, has been testing the Unisys system for the past two months to link its Boston headquarters and San Francisco offices. Fidelity executives could not be reached for comment.

"There is a segment of the market out there that would demand this type of quality, so they wouldn't mind paying at this price level," said David Mack, vice president of research at WorkGroup Technologies, Inc. "If you're in the market for real videoconferencing — and not that [NASA] moon landing stuff — then the Unisys product is a slam dunk. If you're only going to use a system for 20 minutes once a month, then it's probably not worth it," Mack added.



Unisys' Desktop Videoconferencing System *delivers quality at a premium*

Quick and easy

Each Desktop Videoconferencing System ships with Microsoft Corp.'s Windows for Workgroups 3.11 and all software preloaded. Unisys said this lets users install the systems in less than an hour.

Coursey

CONTINUED FROM PAGE 59

world to Microsoft, physically and logically. I'd like to see Novell adopt this mix-and-match approach, allowing everything to talk to everything else. This isn't a strategy that Microsoft can adopt, so Novell has the opportunity to remain in the middle of every network.

• **Groupware is important and can drive the business.** I don't believe anyone can deliver today the package of workgroup technologies that Novell can. Under Ray Noorda, Novell extended itself technologically in ways I found hard to understand, then had to retract. How many mail and messaging strategies were there? Did anyone really understand them? Why did Novell try to turn Unix into a desktop operating system? And what about AppWare? Was it really ever going to be a cross-platform development environment of any real significance?

Put E-mail first

The good news here is that the Novell groupware strategy is being driven from the WordPerfect campus, largely by folks who built WordPerfect Office (now called Novell GroupWise). The strategy they have outlined is based on groupware service "modules" running on NetWare servers that allow users to choose features.

Still, I get the idea that Novell's document management group — formerly Soft Solutions — is taking precedence over the messaging group (GroupWise). Don't let this happen! E-mail is more important, and WordPerfect was building a good reputation as a mail vendor.

There is a big commitment to this component architecture and the difficult goal of connectivity between Novell groupware and everyone else's groupware. Given the team's record of delivering good software in a reasonable time frame, Novell may have finally gotten its messaging act together.

• **Find vision.** Microsoft's marketing runs circles around Novell's. Novell has the technology and probably even the vision, but it needs to communicate it simply and directly — which it has never managed to do. Novell must rebuild its damaged credibility by delivering on its promises, and it must communicate very clearly how it sees the world developing.

In short, Novell needs to offer a choice that is interoperable with the world yet clearly different from what's out there. Customers need a reason not to make the default choice, which would be to follow Microsoft whenever possible.

Coursey is editor of "P.C. Letter," a San Mateo, Calif., industry newsletter. His MCI Mail address is 558-4460.

Vendors team for automated LAN backup

By Mary Brandel

Despite all the backup software and automated tape changers available for Novell, Inc. NetWare LANs, some users still face at least one big problem: a lack of automation.

For experienced network administrators, it is a headache; for bank branches, satellite sales offices and other remote sites, it is often a problem that cannot be overcome.

"The farther away you get from the central site where the knowledge is, the [less likely it is] that backups are going to be done," said Mark Friedman, president of Demand Technology, a consulting firm in Naples, Fla.

Last month, Hewlett-Packard Co. joined Novell, Palindrome Corp. and Legato Systems, Inc. to create affordable autoloader technology that requires little expertise or intervention.

Easier for users

The result: a set of criteria — called LABS, or Low Admin Backup for Servers — that HP recommends for software that runs with its autoloaders. Criteria include easy installation and configuration, unattended operations for weeks at a time and automatic error recovery.

Legato and Palindrome have developed lower-cost, simplified versions of their own flagship products that comply with that list.

On the hardware side, HP is expected to follow up this week with a lower-capacity autoloader — a six-cartridge, 48G-byte device that remote sites should find affordable.

With previous autoloader software, "if anything went wrong, things just came to a halt," said Edward Cooper, vice president of marketing at Legato. In addition, a LAN expert was required to install the software.

With LABS, "the autoloader was designed to prelink with the software, and the software was designed to prelink and be knowledgeable about the autoloader technology," he said.

But for users, perhaps the most welcome capability is automatic head cleaning.

Currently, "the only way we can tell [the heads need cleaning] is the light on the tape drive blinks," said Michael Haught, information systems manager at Stow Davis Furniture, Inc. in New Paris, Ind. With three NetWare servers, Haught backs up 100G bytes of data a week on a 12-tape autoloader.

"These devices are like a VCR," Friedman said. "If you don't clean them from time to time, you don't have good playback. If you can't play back, your backup is worthless."

The lower-cost autoloader will be a welcome offering. Today's low end consists of 10G-byte devices costing $10,000 to $15,000. At that price, companies cannot afford to put an autoloader in every location, Friedman said.

Cheyenne Software, Inc., the market share leader in LAN backup, will not introduce a LABS-compliant product. "We've been shipping what HP would call a LABS-compliant product for a year and a half now," said Jim McNiel, executive vice president at Cheyenne.

Automatic cleaning, missing now from Cheyenne's Arcserv, will be in the next version.

The main reason for Cheyenne's nonparticipation is price. "HP wanted software for $1,000," McNiel said. Legato's LABS system, Staccato, sells for $995. HP will sell Palindrome's product with its autoloader, according to both companies. Cheyenne's backup software ranges from $495 to $2,395.

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EDI/E-mail system saves money, time

By Lynda Radosevich

At the Wright Patterson Air Force Base in Dayton, Ohio, purchasing agents have a semi-secret weapon for gathering price quotes: electronic data interchange (EDI).

The purchasing agents use EDI with their desktop electronic-mail system to broadcast price requests for items too small to merit formal requests for proposals — typically for supplies costing less than $2,500. The requests go from their desktop E-mail system to a third-party hub where they are changed into standard EDI X12 transactions.

From there, the requests travel to value-added networks from which they are sent to potential vendors. Formerly, the agents researched costs for items such as desk calendars and computer repair services by calling several vendors.

The E-mail/EDI-based method draws in more quotes, and the added competition has saved the Air Force base $1.3 million over the past two years, according to Lou Cosby, deputy division chief of operational and central support contracting at the base.

"We've cut lead time significantly and lowered prices by including vendors that didn't know before when we were buying these things," he said.

Atypical solution

Wright Patterson's combined EDI and E-mail system is not typical, industry analysts said. Most companies' EDI communications are mainframe-based, not flexible enough to handle ad hoc transactions and not integrated with person-to-person E-mail systems. However, progress is being made, the analysts added.

"Most companies have diffcrent staffs running the EDI and E-mail systems, and few have drawn a connection to each other," said Ted Myer, an analyst at Rapport Communication in Tacoma Park, Md. "However, the broad trend seems to be that there is steady pickup on the idea that the two really do belong together, and we're seeing various bits and pieces of evidence for that."

According to analysts, the main benefits of integrating

EDI/E-mail, *page 68*

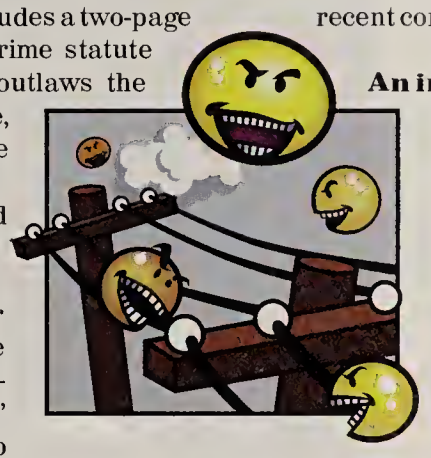
Statute outlaws viruses

Clinton's crime package makes it illegal to transmit corrupt code

By Mitch Betts
WASHINGTON

The scope of the crime bill signed last month by President Clinton is breathtaking. It bans various assault weapons, authorizes midnight basketball programs and corrects the spelling of "kidnaping" to "kidnapping" in the federal law books.

Furthermore, the omnibus bill includes a two-page revision to the federal computer crime statute that for the first time effectively outlaws the transmission of rogue computer code, such as viruses and worms, over the nation's electronic networks.



Not that it actually uses the word "virus." The new statute covers the unauthorized transmission of "a program, information, code or command" that will "cause damage to a computer, computer system, network, information, data or program."

Previously, prosecutors had to stretch the existing computer fraud and wire fraud statutes to cover computer viruses.

The goal of the language was to cover viruses without having to define them or amend the law each time a new virus-like scheme is invented. Also, by focusing on harmful transmissions, the statute tries to steer clear of outlawing the new breed of on-line software agents such as AT&T Corp.'s PersonaLink.

Changes made

A key change in the law is the creation of two levels of computer crime: Actions taken "with reckless disregard" for the damage they could cause are classified as misdemeanors, and intentionally harmful acts are classified as felonies.

Experts said the "reckless" provision was added to make it easier to prosecute cases like the one involving the 1988 Internet worm unleashed by college student Robert Morris Jr., where the defense argued that the harm was unintentional.

Michael Godwin, counsel for the Electronic Frontier Foundation in Washington, praised the law for creating the distinction between intentional and unintentional damage. "It creates a greater calibration of the Computer Fraud and Abuse Act," he said at a recent conference about on-line legal issues.

An improvement

Former prosecutor Stephen Fishbein, now with New York law firm Shearman & Sterling, agreed that the new statute is an improvement, although he complained that "if a hacker is just curious, they're not guilty of a crime at all."

The new law also replaces cumbersome language about crimes involving multistate computers with simpler language specifying computers "used in interstate commerce or communications." That makes it consistent with other laws involving interstate commerce, experts said. Computer crimes causing damages amounting to $1,000 or involving medical records would fall under federal jurisdiction.

A separate section of the crime bill prohibits state motor vehicle agencies from selling personal information gleaned from their databases. The measure was meant to provide some "driver privacy" and make it harder for stalkers to find their victims, although the final version has numerous exceptions.

The crime bill has several other provisions relating to information systems, including the formation of a federal database on cases of domestic violence and $150 million to implement an interstate system for background checks on gun buyers.

It's the law

The federal law against computer crimes has been repeatedly amended to broaden its scope and clarify its terms:

- Computer Fraud and Abuse Act of 1984: Outlawed unauthorized access to data stored in federal government computers.
- Computer Fraud and Abuse Act of 1986: Expanded to include federally regulated financial institutions and crimes involving computers in more than one state.
- Computer Abuse Amendments Act of 1994: Expanded to include transmission of harmful code such as computer viruses.

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- Are your UNIX systems linked to LANs? Are you moving to client/server?
- Do you access 3270/5250 applications interactively, use batch (RJE), or do both?
- Do you need programming interfaces such as HLLAPI, APPC/CPI-C/LU6.2, and LUA/LU0?
- How do you manage your network? How do you distribute programs and files to your remote UNIX systems?
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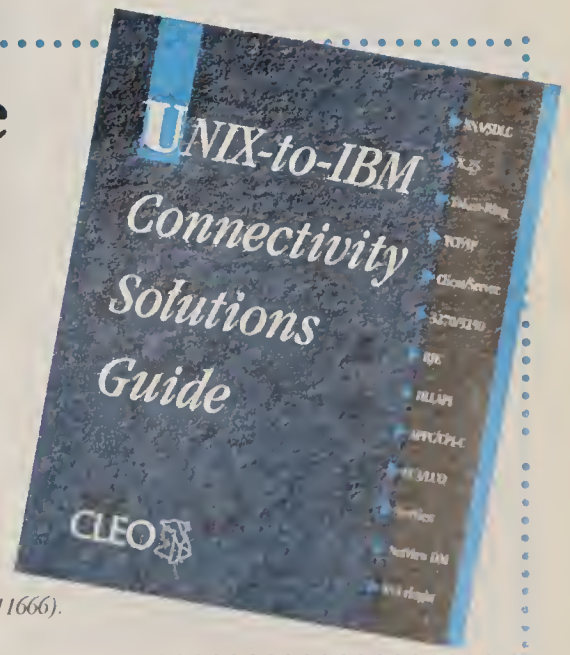

Banyan users cling to Vines-based products

By Lynda Radosevich

Until Banyan Systems, Inc. delivers on its promise to supply more applications, customers will have to keep relying on third-party products such as the Vines-based packages announced at the recent Association of Banyan Users International Conference.

Included in Banyan's plans are messaging and directory services, the company announced at the user conference in Providence, R.I. [CW, Oct. 3].

But these plans are not happening quickly enough for some customers. "We're looking now at collapsing our Banyan servers into a backbone, and that would require centralized backup," said Tony Godfrey, network administrator at Nordson Corp., an industrial adhesives company in Amherst, Ohio. "I need something now, and Banyan's product isn't even in beta testing yet."

Answering that call, AT&T Corp. previewed AT&T CommVault for Banyan at the conference. Attendees said it was the first enterprisewide storage management product for Vines networks, which tend to be very large. Now the only way to back up the networks is to manually exchange tapes at each server during each backup session.

Other third-party developments at the conference included the following:

• **Fast Track, Inc.** in Germantown, Md., released Version 3.0 of Expose, a distributed network management product. It supports Vines, Novell, Inc.'s NetWare and Microsoft Corp.'s Windows NT operating systems and Simple Network Management Protocol devices.

• **LANshark Systems, Inc.** in Reynoldsburg, Ohio, unveiled SharkMail 3.0. One of the leading mail front ends for Vines mail, the software supports Banyan's Intelligent Messaging III. LANshark also shipped Mail Expert, a server-based electronic-mail manager that filters and forwards mail, and StreetLegal, a Vines software license metering package.

• **Trellis Corp.** in Princeton, N.J., announced Corporate Helpdesk, a service and support management utility for Vines based on Notes. Trellis also said it transferred the publishing rights of its Vines management tools to NetPro Computing, Inc.

Second in line

Although it is a first for Banyan, AT&T's CommVault already runs on Novell's NetWare, Digital Equipment Corp.'s VMS and Unix networks. Pricing starts at $80,000 for software, jukebox, platters and workstations.

Briefs

Call router

GeoTel Communications Corp. in Littleton, Mass., introduced its first product, Intelligent CallRouter. The call processing software offers call-by-call routing to multiple, geographically dispersed agent groups. It will be available in the first quarter of 1995.

Let's make a deal

IBM has purchased the rights to incorporate **Proteon, Inc.**'s internetworking software code in its hub, routing and switching products. **Digital Equipment Corp.** and Proteon inked a similar deal.

HP pilots network

Hewlett-Packard Co. said Japan's **Nippon Telegraph and Telephone Corp.** is installing $10 million in HP 9000 Unix servers and HP's DCE/9000 software to build a pilot intelligent value-added network.

A smart way to spe

Commentary

Steve Moore

Translation, please

Asynchronous Transfer Mode (ATM) captures the imagination of network managers because it offers tremendous advantages over previous data transmission technologies in the form of higher speeds, multimedia capabilities, greater scalability and applicability to LANs and WANs.

But the eyes of most corporate executives glaze over when ATM tech talk infiltrates the boardroom. Network managers need to translate ATM's technical advantages into compelling budget proposals that highlight ATM's potential to deliver far-reaching structural efficiencies — and resultant cost savings — to large organizations.

Here are four examples of ATM technical arguments, each paired with a translation:

Tech talk: ATM's cell-based structure makes it a natural for high-speed multimedia networks in which all types of traffic are integrated at every level of the protocol stack.

Translation: A company no longer needs to maintain separate networks for telephone users, computer users and video system users. Instead, it can eliminate that costly redundancy by letting ATM carry that traffic over a single network that can handle much higher data rates than the old network did.

Tech talk: ATM decouples a network's physical addressing from its logical addressing.

Translation: Let's address the bottom line here. With the right ATM software, there is no need to spend time and money dispatching technicians to swap connectors and change network addresses when employees move from one office to another. Instead, a centrally located network administrator can accomplish the same tasks with a few mouse clicks.

Tech talk: ATM technology is equally applicable to both LANs and WANs.

Translation: There is no longer a need for technologically separate LANs and WANs because ATM is an equal-opportunity employer. Redundancy can be eliminated from network planning, installation and maintenance, as well as from the training of technical staff and end users. This results in greater efficiency.

Tech talk: ATM is highly scalable.

Translation: ATM can bring all the benefits previously described to a Fortune 50 company or a start-up with 50 or fewer employees. Don't forget to tell the execs that now is the time to plan for ATM. Unlike ISDN, which took 10 years to arrive, ATM has become a realistic networking alternative in three years. Although ATM was deployed first in switched LAN environments, full-scale LAN/WAN ATM implementations are feasible in the U.S. Global ATM deployment will take a few more years.

Moore is a senior editor, networking, in *Computerworld*'s West Coast bureau.

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Artisoft ports Lantastic to OS/2

By Suruchi Mohan

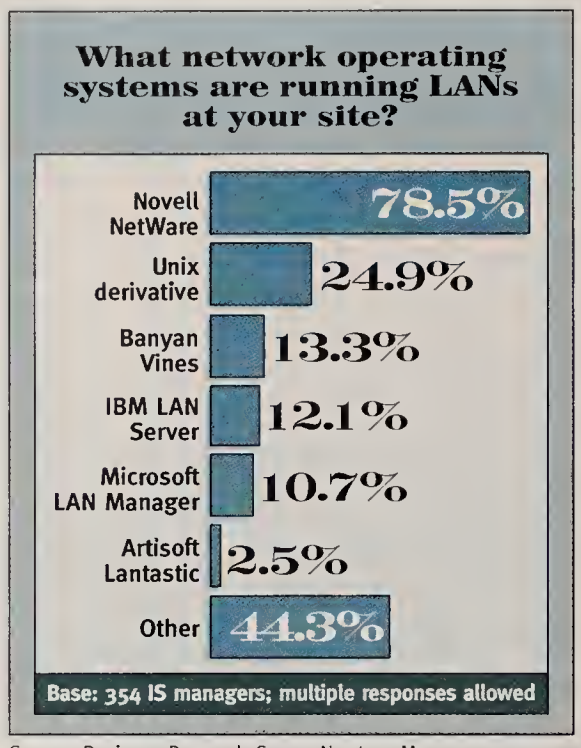
Artisoft, Inc. has announced a version of its Lantastie network operating system for OS/2 that seeks to fill some holes in IBM's lineup.

"IBM has indieated that it's not ineluding peer-to-peer networking with its upeoming release of OS/2," said Stan Schatt, LAN serviee direetor at Computer Intelligence/InfoCorp in La Jolla, Calif. "Artisoft has found a number of poekets of Lantastic within larger IBM shops, and there's some opportunity for them in a niehe market."

Packard Instrument Co. in Downers Grove, Ill., has a departmental Ethernet network connected to an enterprisewide Token Ring network. Two years ago, the company started migrating its departmental DOS machines to OS/2. Because the OS/2 version of Lantastic was not available, Paekard went with IBM's LAN Server, according to George Szatkowski, a prineipal programmer at Paekard.

The result was two networks — Lantastic and LAN Server — wired together but unable to eommunicate. Lantastic for OS/2 lets the OS/2 maehines talk to all the servers on the network. Compared to LAN Server, Lantastie for OS/2 is a lot easier to use, Szatkowski said. Further, "peer-to-peer in OS/2 is something we haven't had. NetWare didn't provide that, and LAN Server provided it" in a limited fashion only, he added.

It is not just the larger eompanies with departmental LANs that are finding this produet attraetive. Smaller firms that want the multitasking eapabilities of OS/2 are also interested. David Terry, head programmer at Clark Development Co. in Murray, Utah, said several employees at his firm had OS/2 maehines on their desks, but beeause Lantastie 6.0 did not support them, they could not log on to the network.



Source: Business Research Group, Newton, Mass.

One solution

To get around this problem, Terry worked out a compliеated system by which users could run DOS 5.0 within an OS/2 environment and open one window to the network. This setup was restrictive, however, beeause users could not run multiple applications off the network. Lantastie for OS/2 has helped alleviate this problem, Terry said.

Although he said he is happy with Artisoft's porting of Lantastic to the OS/2 environment, Scott Sorrell, a computer consultant at law firm Carnahan, Carnahan & Hickle in Rolla, Miss., said he is disappointed that the OS/2 version does not support the Artisoft Exchange mail system. Third-party packages such as CC:Mail work fine across different platforms, but Exchange does not, he said.

Cisco enhances Catalyst switches

By Steve Moore

■ Users of Cisco Systems, Inc.'s Catalyst LAN switches have gained additional network management capabilities with recently introduced features: a Switched Port Analyzer and a Remote Network Monitoring (Rmon) agent.

With the Switched Port Analyzer, users no longer need either an external repeater or multiple, distributed standalone analyzers. Instead, customers ean eonserve staff time and budget resourees by using a single analyzer to monitor as many as eight LAN segments.

The Switched Port Analyzer allows a single analyzer to monitor up to eight LAN segments.

The built-in Rmon agent, eo-developed by Ciseo and Frontier Software Development, Ine., supports concurrent remote monitoring of all LAN segments supported by a Catalyst switch. Network managers ean use the Rmon data to identify overloaded LAN segments and determine which users are generating the most LAN data traffic.

Both new Catalyst features will be available next month.

Multimedia support

Later this year, Cisco plans to add new multicast capabilities to the Catalyst switch so it will be better able to support data-intensive multimedia applications sueh as World-Wide Web access using the Mosaic graphical interface.

A Cisco spokesman said the forthcoming multicast features will allow a network manager to segregate LAN traffic on different segments so heavy data traffic generated by one workgroup does not bog down another workgroup's LAN segment.

EDI/E-mail

CONTINUED FROM PAGE 65

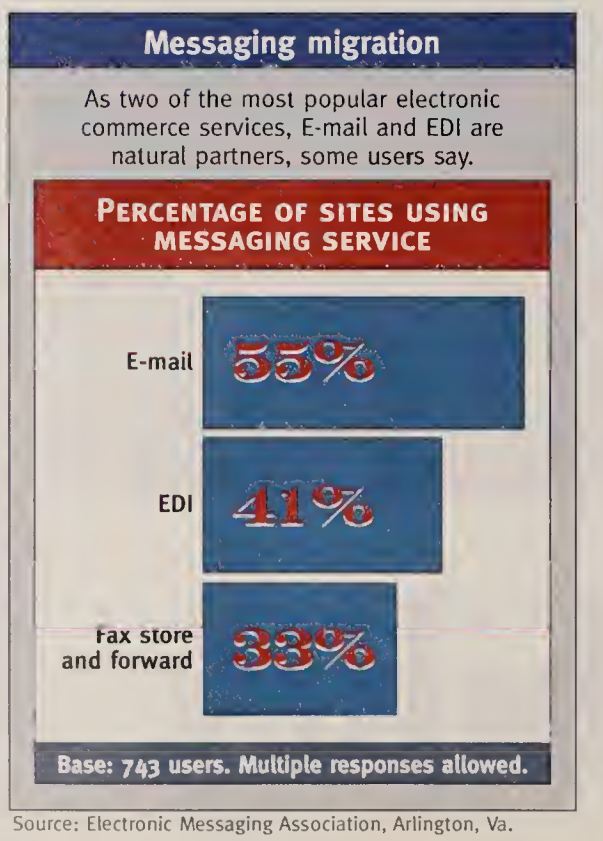
EDI into E-mail include the following:

- Lower eosts beeause the two systems ean use the same eommunieations infrastructure.
- The ability to integrate front-office proeedures, sueh as gathering approvals, marketing and sales, with back-office funetions sueh as bulk transmissions of purehase orders.
- The ability to route messages to multiple addressees rather than just point-to-point as in traditional EDI systems.

Robert E. Frank, chief scientist for electronic commerce and EDI at Lawrence Livermore National Laboratory in Livermore, Calif., has spent the past several years working on a pilot project that wraps EDI transaetion sets into the Internet's Simple Mail Transport Protocol or into X.400 E-mail "envelopes." The lab provides the EDI-to-E-mail service for Wright Patterson.

E-mail messaging is a better transport for EDI than the current value-added network file transfers, Frank said. This is because an E-mail message carrying an EDI transaction can be routed through a network and ean be stored and forwarded. In other words, E-mail does not require a live session to complete a transaetion.

Also, integrating E-mail and EDI can help businesses run more efficiently by eombining formerly separate processes. For instance, a eompany could use Lotus Development Corp.'s Notes to traek the sales proeess and use eleetronie forms and workflow proeesses to approve a bid.



Source: Electronic Messaging Association, Arlington, Va.

Onee the sale is approved, the firm eould eonneet to the EDI system to track ineoming orders and inventory, Frank said.

"Traditional EDI only enters into the transaction process after there is a specific contract in place," Frank said.

But it will take the involvement of brand-name desktop vendors such as Lotus to drive the broad market for integrated EDI and E-mail, analysts said.

To that extent, a Lotus official said the company is talking to EDI vendors about partnering on software that can translate Notes forms to EDI transaetions.

Increased support

Also, companies such as Isocor in San Franeiseo are building X.400 standard messaging backbone components, whieh support the X.435 standard. X.435 defines how to transport EDI transactions within an E-mail message. Isocor is also working on software that will help integrate Microsoft Corp.'s Messaging Application Programming Interface elient software with Isocor's E-mail/EDI baekbone.

Myer said there will be a more widespread move to link EDI and E-mail during the next two years. But first vendors must address issues such as security, management and reliability.

Most of the major E-mail players have not yet eommitted to supporting X.435 and other EDI standards. But the vendors are working on new client/server messaging systems — which they plan to deliver next year — that address the reliability and seeurity issues that stand in the way of using E-mail for EDI, Myer added.

The basie problem is that E-mail is not partieularly secure beeause messages must travel over a wide span and through multiple servers to reach their destination. Some systems that will attempt to solve this problem but are yet to be delivered include Microsoft's Exchange, Novell, Inc.'s Collaborative Computing Environment and Lotus' Communications Server.

Brief

MCI offers analog cellular

MCI Communications Corp. will provide analog eellular access into its network through a service launehed last month at Networld/Interop '94 in Atlanta. Called XstreamAir, the service includes wireless access via an 800 dial-up to MCI cellular modem pools at speeds of up to 9.6K bit/sec. MCI plans to offer local access in selected eities by the end of the year. Cellular coverage is provided for and billed by the cellular carrier of the customer's ehoiee.

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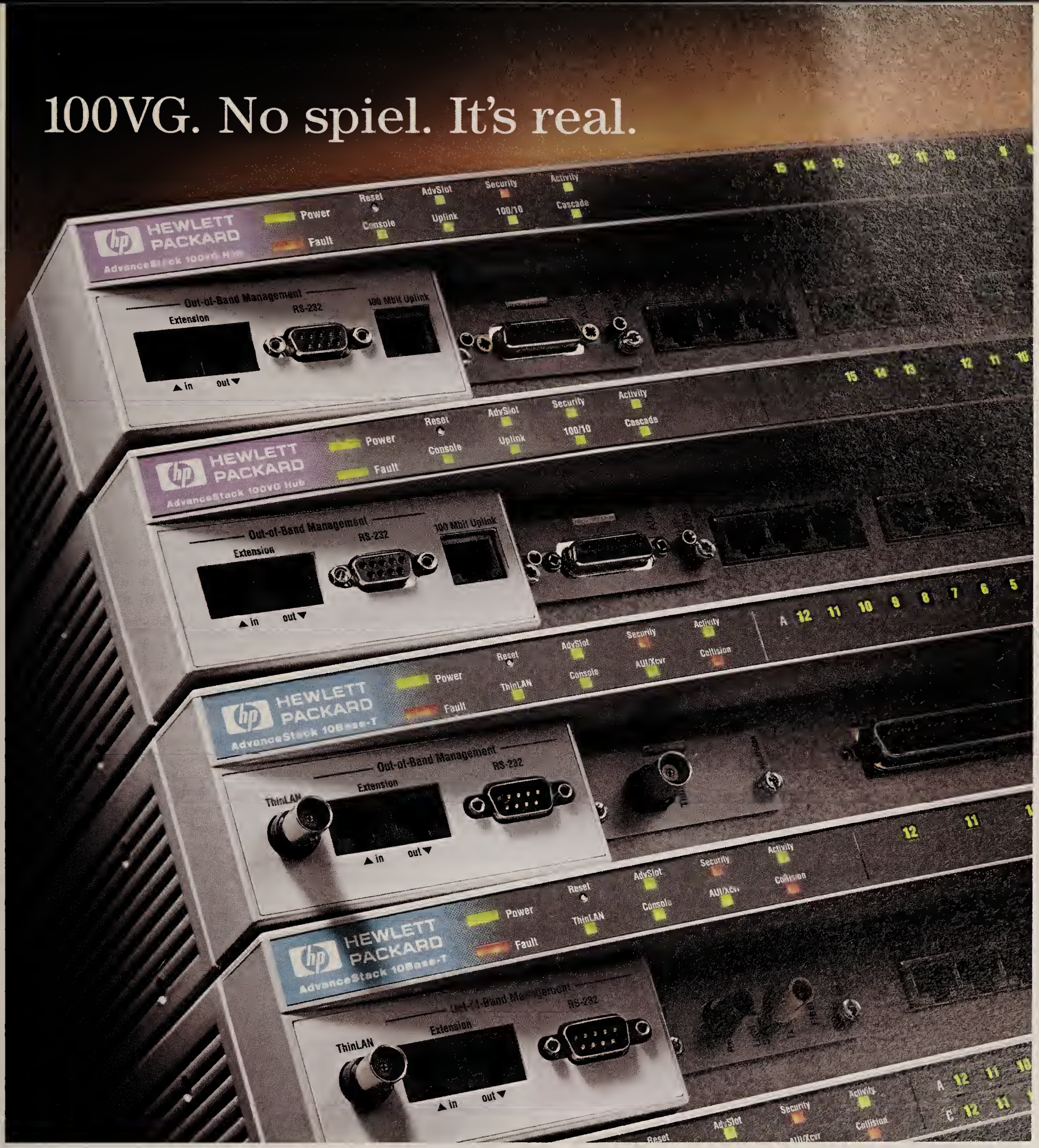

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TechSmith eases remote access

By Michael Fitzgerald

TechSmith Corp. recently introduced software to help ease the pain of remotely dialing into a network.

Enterprise Wide is a client/server remote access package that sits on the LAN gateway and the remote client. It lets users act as remote nodes on the corporate network. The product has built-in security for data transfer and improves transmission speeds by acting as a filter for data acknowledgment packets, according to the East Lansing, Mich., vendor.

Typically, data sent from a remote computer to a LAN is wrapped inside protocol packets so the network can acknowledge that data is being sent and received. TechSmith uses ProtocolAssist, an intelligent agent at the LAN gateway and the remote client, to filter the acknowledgment packets, which increases transmission speed up to two and a half times.

The product is complex but has been useful, said Ralph Suozzi, a technology manager at a large financial services firm in New York. The company moved from an IBM System/38 that gave remote users limited access to a distributed client/server platform based on PeopleSoft, Inc.'s human resources software. The client/server platform uses a previous version of TechSmith as the connectivity tool.

"Before, people basically were Federal Expressing reports back and forth because the response time on our 3270-access system was terrible," Suozzi said. TechSmith helped the company's remote sites get information on-line.

On the rise

Forrester Research, Inc., a Cambridge, Mass., market researcher, predicts the remote control market will peak at $137 million this year; the remote node market will grow from $231 million this year to $1.3 billion in 1997.

Enterprise Wide runs under common network protocols such as TCP/IP, IPX/SPX and NetBIOS/NetBEUI. It works on regular phone lines or X.25 packet-switching networks and can simultaneously support 16 asynchronous connections or 24 X.25 connections.

The product is now shipping and costs $2,495, with four asynchronous connections. An add-on product, Remote NetLib, supports SQL Server and costs $1,995 per gateway.

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New Products

Wellfleet Communications, Inc. has announced the ATM Link Module, a network interface for Wellfleet's routers and bridges.

According to the Billerica, Mass., company, the ATM Link Module lets users network Wellfleet equipment to Asynchronous Transfer Mode (ATM) switches via Sonet or Taxi connections at speeds up to 155M bit/sec. The product also supports connections to enterprise ATM switches, ATM carrier services and workgroup ATM switches.

Prices start at $19,000.

▶ *Wellfleet*
(508) 670-8888

NetWorth, Inc. has announced NetWare Switching Technology, a family of switches and NetWare Loadable Modules (NLM).

According to the Irving, Texas, company, NetWare Switching Technology optimizes NetWare LAN performance by synchronizing the NetWare server with the Ethernet switch, making the server "switch-aware" so that it balances data throughput to the switch.

The product incorporates NetWorth's PowerPipes 10/100 Ethernet switch, four NLMs and two multiport Ethernet server adapters. The Flow NLM regulates 100M bit/sec. data flow. Balance, Redundancy and Route-Off NLMs maximize throughput in switches installed on networks with multiple-server connections.

NetWare Switching Technology is extensible to Asynchronous Transfer Mode.

Prices for the NLMs range from $995 to $1,695; the PowerPipes Ethernet switch costs $8,995.

▶ *NetWorth*
(214) 929-1700

Emerald Systems has announced Xpress Shadow, network file server mirroring software.

According to the San Diego company, Xpress Shadow mirrors data from a primary server to a secondary server that is running Novell, Inc.'s NetWare. The product requires no hardware other than a pair of file servers.

The software can mirror the entire server or specific volumes, directories or files. It supports mirroring from several servers to one server and lets users choose schedules for server pairs.

Prices start at $995.

▶ *Emerald Systems*
(619) 673-2161

Alexander LAN, Inc. has announced Dexter 1.0, a multipurpose debugger extender for Novell, Inc.'s NetWare 3.13 and 4.x file servers.

According to the Nashua, N.H., company, Dexter 1.0 lets users determine critical file server information even after an abnormal end or crash by providing instant access to event history.

Features include symbolic stack walking, complete symbol table display and an exported application programming interface for NetWare Loadable Module developers.

Dexter 1.0 costs $249 per server.

▶ *Alexander LAN*
(603) 880-9900

Frontier Software Development, Inc. has announced Netscout Manager 3.0, a network monitoring product.

According to the Tewksbury, Mass., company, Netscout Manager 3.0 lets network administrators analyze enterprisewide network traffic from the physical layer to the application layer for a variety of network parameters.

Features include 10 new integrated diagnostic applications, an icon-based front end and the addition of Protocol Monitor, Traffic Monitor and Resource Manager applications.

The product's modular architecture provides for easy upgrades with new application tools. Netscout Manager 3.0 supports Frontier's SuperRMon 7 agent software.

Prices start at $2,995 for the Windows version and $4,995 for Unix versions.

▶ *Frontier Software Development*
(508) 851-5700

FutureSoft Engineering, Inc. has announced DynaComm for Windows 3.2, high-end terminal emulation and communications software for multiplatform enterprise networks.

According to the Houston company, DynaComm for Windows 3.2 supports the DynaComm Visual Basic Toolkit. It features TCP/IP stack integration and includes a graphical dialog editor.

Additional features include new scripting verbs for passing global variables back to the dialing directory and updated on-line help. The graphical dialog editor lets users create front ends for mainframe applications with graphical tools, which the product then uses to interpret and create scripting code.

DynaComm for Windows 3.2 costs $249.

▶ *FutureSoft Engineering*
(713) 496-9400

Alantec Corp. has announced PowerSight, graphical management software for the PowerHub family of switching hubs.

According to the San Jose, Calif., firm, PowerSight lets network managers control PowerHub's attributes from a single location with point-and-click operations.

Features include virtual LAN configuration, bandwidth management tools and fault management.

PowerSight costs $4,995.

▶ *Alantec*
(408) 955-9000

Product short

CommTouch Software, Inc. has introduced Pronto/IP, a PC-based electronic-mail client to a TCP/IP host. The product lets users exchange E-mail with TCP/IP hosts without a gateway and integrate PC applications with advanced TCP/IP and Internet facilities. Cost: $69. CommTouch Software, San Mateo, Calif. (415) 703-0400.

The Toshiba T4700CT

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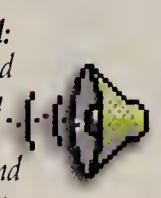

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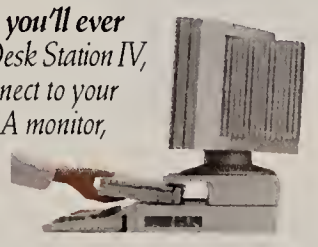

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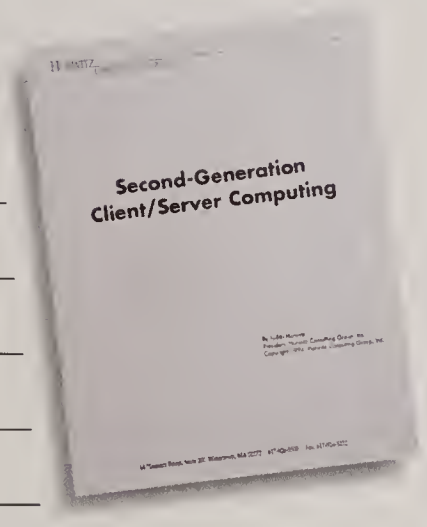

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Application developers who have moved to graphical development tools are learning a painful lesson: while prototyping is fast and easy, it's another thing to try to deploy enterprise applications.

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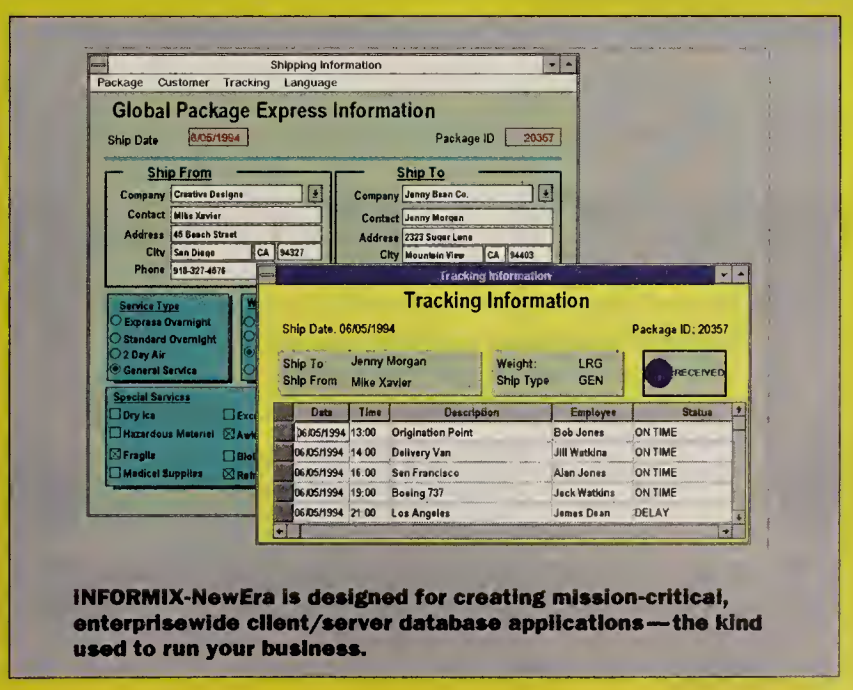

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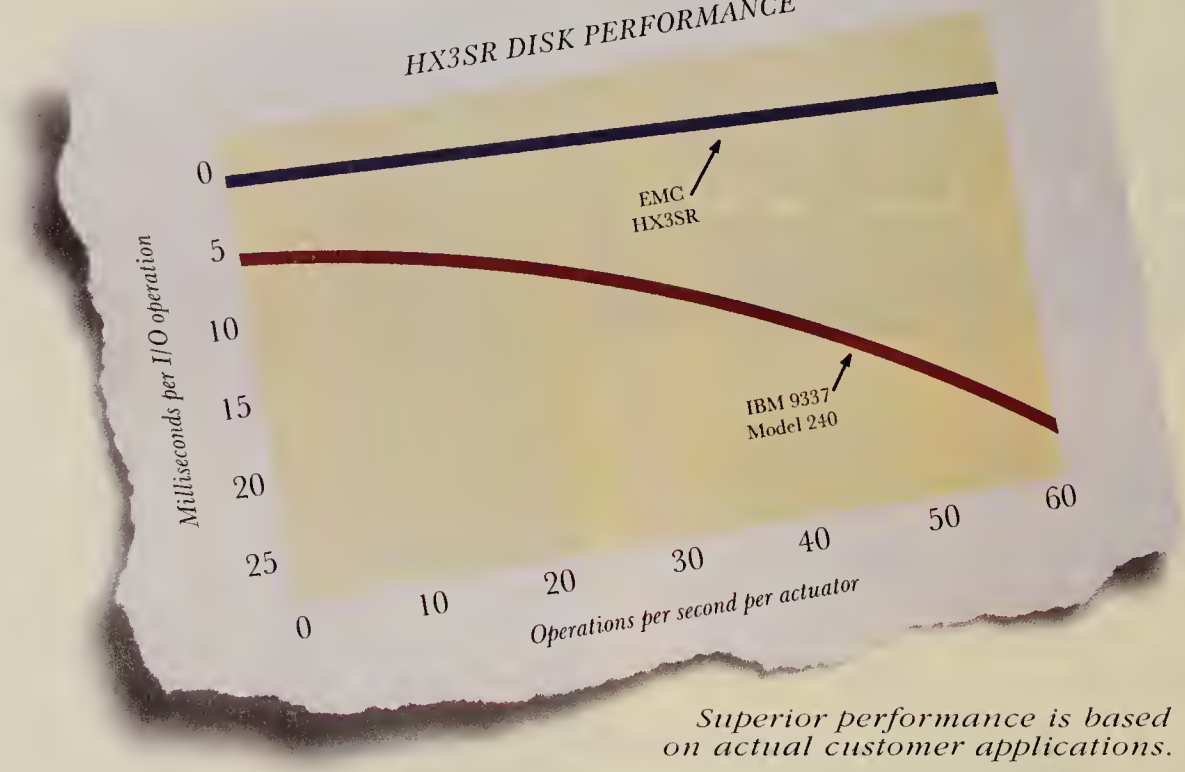

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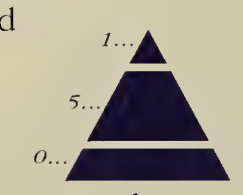

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Raw power is lure in Cray's low-end bid

By Craig Stedman

■ Cray Research, Inc. is trying for the second time to establish itself as a force to be reckoned with for general-purpose industrial computing. This time around, Cray is offering considerably more raw power than it was able to muster in its first low-end supercomputers.

While Cray dominates the market for large supercomputers costing upward of $30 million, its 3-year-old smaller systems line has not been regarded as particularly supercharged. But Cray recently introduced a J916 low-end model that analysts said lives up to its name better than the earlier EL90.

More to come

Volume shipments of the J916 are scheduled to start in March or April, according to Cray. The company said it also plans in the first half of next year to expand the low-end J90 line beyond the 16 processors on the J916. Support for clustering multiple J90s together will be added as well.

Promised performance

"Based at least on the specifications, this looks to be a far more compelling product than its predecessor," said Gary Smaby, president of Smaby Group, Inc. in Minneapolis. "The price/performance just wasn't there" on the EL90 to give the system enough appeal in the broad technical market, he added.

Altair Engineering, Inc., an automotive design and analysis company in Troy, Mich., is satisfied with the two EL90s it has installed. But Neil Price, director of marketing at Altair, said the J916's promised threefold performance improvement should allow the company to widen its computing horizon.

"We've got classes of problems that won't even fit" on the EL90, Price noted. "The need for this type of analysis is growing, and we're getting bigger and bigger problems thrown at us all the time." Altair expects to be one of the first customers to get a J916 when it ships early next year, he said.

With the J916, "we could attempt to do things that we don't currently try," agreed Jon Knight, vice president and chief investment officer at Atlantic Portfolio Analytics and Management, Inc. (APAM), an investment company in Orlando, Fla. There are limits to how many simulation jobs his company can "comfortably run and store" on the four-processor EL90 that APAM owns, Knight added.

The J916's 4G-byte memory capacity is enticing compared with the 1G-byte limit on the EL90, Knight said. But he said APAM has not benchmarked the J916 yet and will not make any firm upgrade plans "until we see what kind of performance we can get" from the new hardware.

Fast gets faster

CUSTOMERS SHOULD BE ABLE TO GET CRAY RESEARCH'S LOW-END J916 SUPERCOMPUTER INSTALLED JUST TWO TO FOUR WEEKS AFTER PLACING ORDERS

J916 specifications

Number of processors:	4 to 16
Peak performance:	200 MFLOPS per CPU
Memory capacity:	500M bytes to 4G bytes
Memory bandwidth:	25.6G bytes per second
Number of I/O subsystems:	1 to 16
List price:	$225,000 to $2 million

The EL90 machines have not exactly been a bust. Cray executives said more than 180 of the low-end systems have been installed since their 1991 debut, with about 140 of those going to customers who had never bought one of the company's big water-cooled supercomputers.

Not quite there

But analysts said sales have not met Cray's original expectations due in part to the 1992 collapse of a deal under which Digital Equipment Corp. was supposed to handle most of the marketing for the low-end machines. That forced Cray to depend on its much smaller sales force to try to break into new accounts.

Daniel Hogberg, general manager for small systems at Eagan, Minn.-based Cray, acknowledged that the EL90 machines have been "quietly successful." Low-end systems still bring in less than 10% of Cray's revenue, according to Hogberg. However, he added that the company plans to be more visible

Cray, *page 77*

Operating systems

HP extends 3000, drops software prices by allowing smaller user-license agreements

By Mark Halper

Hewlett-Packard Co. has lowered the price of its proprietary MPE/IX operating system for some customers by creating licensing categories for smaller numbers of users.

Information systems shops that previously had to purchase a minimum 64-user license for the Model 928 can now obtain user agreements for groups of 8, 20 or 32 people, according to Olivier Helleboid, general manager at HP's commercial systems division. Previously, only the bottom-of-the-line 918 was available with licenses for fewer than 64 users.

Likewise, HP lowered the minimum for the Models 968 and 978 from 100 users to 64 users and established a 64-user category for the new 988.

The price change applies to all but one of the 9x8 models; these consist of the entry-level series in the PA-RISC-based HP 3000 minicomputer line.

HP also extended that series by adding a top-of-the-line Model 988, claiming it provides a nearly 50% performance boost over the Model 978. The 988 is based on the new "bi-endian" version of PA-RISC, meaning it will have an easier time accommodating additional operating systems such as Microsoft Corp.'s Windows NT if HP makes them available, a spokeswoman said.

OLD AND NEW LICENSE CATEGORIES FOR THE HP 3000 9x8 SERIES

Model	Old minimum number of users/Price*	New minimum number of users/Price*
928	64 USERS/ $56,000	8 USERS/ $31,750
968	100 USERS/ $101,000	64 USERS/ $81,000
978	100 USERS/ $120,000	64 USERS/ $100,000

*Prices include hardware, MPE/IX operating system and HP's Image/SQL database; prices vary with different database configurations.

HP's new pricing policy is "an intelligent move on their part," said Don Harrington, a systems analyst and HP 3000 user at The Boeing Co. "People who want to start small can do that without having to pay for usage of a big machine."

Foundation Health Corp. Chief Information Officer Dana Brown said the move is a step in the right direction.

"I don't like tiered pricing in the first place, but I'm glad to see they extended it down because there are applications where you need a large box but you have few users," Brown said. "HP is recognizing the problem at least."

HP did not make the licensing adjustment for its midlevel 9x7 or for the premium 992 and 995 Corporate Business Systems. HP product manager Andy Jolls said the company is looking into establishing lower-user tiers for these higher-end machines.

Brown said he hopes that HP will apply the new licensing terms to the larger boxes. The Rancho Cordova, Calif.-based insurance company's HP 3000 collection includes two 990 series computers and an older Model 949, among others.

Unlike some users, Brown said he is opposed to user-based pricing. One reason, he said, is it penalizes IS shops for consolidating computers because an application vendor will base pricing on how many total users a system supports, rather than on how many users specifically use the vendor's product on a particular box.

New in the lineup

Meanwhile, the new Model 988 is aimed at small- to medium-size companies that are adding applications or evolving to client/server computing, according to Helleboid.

The machine uses a 96-MHz PA-7100LC/100 processor and supports up to 1,000 users simultaneously — 100 more than the 9x8 line's previous limit. HP quadrupled memory cache from 256K bytes to 1M byte. An LX version includes two I/O slots, and an RX version has four I/O slots.

Pricing for the new box starts at $90,000 for a 64-user license, a 1G-byte hard drive, a 2G-byte integrated tape drive, MPE/IX and two expansion slots. The same configuration with HP's Image/SQL database is priced at $116,000.

Transportation

United to simplify Denver's troubled baggage project

By Jean S. Bozman
DENVER

United Air Lines has emerged as the systems integrator that will start fixing the computer problems in an automated baggage system that is delaying the opening of the new Denver International Airport here.

United will be the primary carrier at the new airport, with nearly 60% of all flights. But before repair work can proceed, mediation must be concluded between the city of Denver and BAE Automated Systems, Inc., which built the computerized baggage system. However, both parties spent much of last month trading demands for payment of delay costs.

United, which will act as project manager, will revise the system based on its experience in baggage-handling technology used at other airports. "I'd say most of the problems are because of the complexity of the system," said John Philp, director of public affairs at United in Denver. "It's the software to a degree, but also just the size of it," he said in reference to Denver International's 21-mile-long baggage system.

DAVE MARSHALL

United wants to simplify the system and reduce the work load on the individual computers that track luggage on 4,000 one-bag carts. "It is a terrific load for the computer to keep up with," Philp said. In addition, two of United's information systems staffers will continue to work on interfaces between the BAE system and United's Apollo reservation system. United IS staffers have been testing the Denver baggage system since late last year, Philp said.

Stapleton, Denver's other airport, and Denver International share an IS staff. These people are involved in repairing the baggage system but will run it once the bugs are worked out and it becomes operational, according to Ivan Drinks, director of MIS for both airports.

How it works

The 18-person IS staff will support all airport systems once they come on-line, Drinks said. That includes an IBM ES/9000 Model 150, three IBM AS/400s, the central NetFrame Systems, Inc. LAN server and hundreds of PCs.

The BAE automated baggage system is based on PCs, proprietary applications software and a multitasking operating system thought to be IBM's OS/2. The system is intended to speed turnaround time by routing bags automatically among airlines.

A series of laser scanners route the baggage carts on underground tracks, directing each piece of baggage by reading its bar-coded label. There is only one piece of luggage per cart. As many as 60 carts per second are on a single track, but United plans to cut that to 30 per track.

An alternate, traditional baggage system, based on conveyor belts and baggage trucks, is already being constructed for the city by Rapistan Demag Corp. in Grand Rapids., Mich., for about $50 million. It is expected to act as a fall-back plan that will allow the airport to open by Feb. 28.

Denver International's baggage system was modeled on an integrated system in Frankfurt. But Frankfurt's system uses conveyors to carry bags instead of the 4,000 PC-driven automated carts that are supposed to ferry bags at Denver International. Now, United is suggesting additional tracks and fewer carts per track. "It's just like adding another lane onto a highway," Philp said.

Both sides holding out

But first BAE and the city of Denver must reach an agreement on costs. In the mediation, Denver is attempting to recover more than $80 million for BAE's failure to deliver a working system for $193 million by the airport's opening date of October last year.

Denver International's opening was delayed to March, then May and is now slated for February. For its part, BAE has demanded $40 million in payment for additional personnel and equipment it paid for during the delays, a BAE spokeswoman said. BAE denies that computer problems prevented the baggage system from working, the spokeswoman said. Instead, the firm alleges that last-minute changes to the original plans, made by the city, prompted the delay.

Denver pays in the end

Mayor Wellington Webb, who faces an election campaign this fall clouded by the airport delay, urged BAE to work with United to repair the automated baggage system for United's hub operations on concourse B. Two other concourses will use alternate baggage systems to speed the arrival of the airport's opening day.

The city said United has been picking up a sizable chunk of the $1 million-a-day delay costs [CW, Aug. 22].

Denver will not pay BAE for a nonfunctional system, one which was supposed to make Denver an efficient hub in the nation's air traffic system, said Briggs Gamblin, Mayor Webb's spokesman.

The city and United will try to repair the automated system — or part of it — even if the alternate conveyor-driven system comes on-line by February. "Denver is a bottleneck for the entire nation," Gamblin said. "We frequently rank 50th out of 50 cities in on-time performance," he said referring to Stapleton Airport, which was built in 1929. "The whole selling point for [Denver International] is that it is going to save the airlines time, and that it is going to reduce delays."

ON SITE

Denver International Airport
Denver

Challenge: To run an airport on client/server technology connected by a single high-speed fiber-optic network and integrate IBM mainframes as servers on that network.

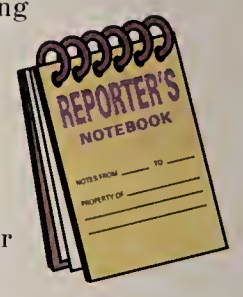
Strategy: Most of Stapleton Airport's computer systems have already been moved to Denver International. The plan is to cut over to the new airport's computer systems on opening day. Computers that run both airports are in place at Denver International, as is most of the 18-person IS staff.

Money pit

So far, Denver has spent $3.1 billion on the airport, which is 24 miles from the city's downtown. Delay costs, mostly interest on airport construction bonds, are continuing to mount at the rate of $1 million a day. Meanwhile, the new airport stands complete — down to the concession stands. But it is virtually empty, save for administrative workers, operations personnel and the automated trains that run between terminals.

Reporter's Notebook

"Making the complex simple" was this year's **International Oracle Users Week** slogan. Too bad **Oracle** itself couldn't get with the program. The database maker has begun billing itself as "the world's largest vendor of information management software." It also calls its Media Server database product set "the leading multimedia database," overlooking the fact that neither the text nor the video portion of Media Server is shipping yet.



Oracle sent feelers out to show attendees about the prospect of offering a midtier database — one that is not quite enterprise caliber but bigger than a workgroup-size database. A so-called branch office server would be aimed, in part, at banks, grocery stores and other users with multiple remote locations. "The AS/400 kind of site," said Nimish Mehta, vice president of desktop products. "This is just a thought . . . not a product in any way, shape or form," he added.

Design Data Systems, an applications maker in Largo, Fla., unveiled what it claims are the first client/server financial packages built with Oracle's Forms 4.0 graphical development tool. The applications were delayed several months because Oracle was late getting Forms 4.0 out the door. Oracle does not yet offer fully graphical financial applications. — *Kim S. Nash*

IBM bows to user access pressures

Users in the UK have won their battle to get free access to a bulletin board after IBM Europe cut off communication with the bug database.

In July 1993, IBM Europe angered UK users by suddenly restricting access to a free database of potential bugs on the DiallBM help desk service. The database holds information on Open Authorized Program Analysis Report software problems, which are so new IBM has yet to note them in manuals. The alternative, IBM's Enterprise Assist service, can cost the equivalent of $15,500 a year.

Earlier this year, IBM UK Chief Executive Nick Temple argued for free access while in Europe after being lobbied by two key user groups — the IBM Computer Users Association (CUA) and the Guide large systems working group.

Julie Williams, chairwoman of the large systems group at Guide, said the problems have been sorted out. "Anyone with a genuine requirement can get a password for free access to DiallBM." She said there had been no reports of users being denied a password when they asked IBM for one.

Peter Ambrose, director of operations at IBM CUA, said, "Enterprise Assist gives users a warm body to talk to, but that body goes home on a Friday, and there is no one to turn to at the weekend."

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COMPUTERWORLD

PC software takes next step

Downside to suites refuels interest in best-of-breed applications

By William Brandel and Ed Scannell

After paying a single-product price for application suites and reaping the rewards of one-stop shopping, information systems managers are deciding they want the option once again of buying best-of-breed applications

In short, users want to have their cake cheap but leading-edge software and eat it, too. And margin-pressured PC software vendors are scrambling to serve it up with new packaging and licensing deals

Since their advent more than two years ago, application suites discounted bundles of applications have sold quite well. In fact, sales have more than doubled -over the past year, according to International Data Corp., a market research firm in Framingham, Mass. Some industry research figures cite more than $1 billion in suite sales during 1993. As the market matures, however, the IS community is beginning to see a downside to suite offerings from vendors such as Microsoft Corp., Lotus Development Corp

Suites, page 15

Sour on suites

Out of 400 IS managers surveyed, 55% did not think highly of suites, for the following reasons.

If we do not use an application, it is a waste — 30%

We do not like being locked into one vendor — 12%

There is always an undesirable product in the suite — 10%

Source: International Data Corp., Framingham, Mass.

Industry turning to components

By Ed Scannell and William Brandel

Bulging PC applications and shrinking profit margins are forcing major software developers to hasten delivery of componentized applications, which promise to cut development costs and speed delivery of cheaper, more innovative products.

As emerging object technology crosses paths with corporate users' impatience over methods for upgrading applications (see story at left), this new building block approach will empower information systems shops to create their own applications with vendor-supplied components. "Our primary goal is to move out applications

Suites, page 14

Cross Vendor supplied components are expected to spur development of a new genre of networked licensing products.

Proven hand to guide Novell

By Elisabeth Horwitt

Novell, Inc. last week confirmed it is handing over its reins to Hewlett-Packard Co. executive Robert J. Frankenberg, who is said to be an experienced fighter, innovator and strategist

Industry observers agreed those are precisely the qualities needed to successfully meld Novell's highly diversified and fragmented product lines into a winning strategy to battle what one information systems executive called "the operating system wars of 1995."

Frankenberg will take over immediately from 70-year-old President and Chief Executive Officer Ray Noorda, who said he will lend a hand "only when asked."

At the same time, Noorda announced that the Office of the President, which directed Novell's day-to-day operations during the past few

Novell, page 10

Robert J. Frankenberg quickly turned HP into a PC Player

Open Systems

Oil pilot strikes savings

By Jean S. Bozman

The oil industry took a giant step last week toward leveraging open systems to cut information technology costs

Now at the end of its three-month-long, $500,000 industry pilot project, the Petrotechnical Open Software Corp. will ask 150 software vendors to port their applications to a common data model set of standards. At the same time, a second POSC test will start in Europe.

Seven of the world's largest oil firms — such as BP Exploration, Arco Oil & Gas Co., Mobil Oil Corp. and Shell Oil Co. U.S. — backed the pilot. Based in Houston, the pilot was intended to test the theory that the industry could create a single model for a data repository that any firm could use to share exploration and drilling data on joint projects

Glenn Breed, a POSC co-founder and former BP Exploration executive, said the industry could cut information technology costs related to exploration by 30% to 50% in three years by using open systems and standards

Oil, page 16

Making the strategic choice

Overblown promises, slow delivery, endless repositioning. These are facts of life in the operating systems market. Our Guide to Unix vs. NT vs. OS/2 cuts through the hype with an analysis backed by a 400-user Buyer's Satisfaction Scorecard survey and a Firing Line review of Solaris 2.3

See the Guide, Page 93

NT

SCALABILITY

INTEROPERABILITY

Newspaper

Tax Systems Modernization Project

IRS turns to imaging to improve performance

By Gary H. Anthes
WASHINGTON

The Internal Revenue Service in mid-April is a bit like a snake swallowing a pig. Five thousand tons of paper will flow into IRS processing centers this week, and all of it must be hand-sorted, batched, numbered and keyed before any computer processing can begin.

However, the IRS is counting on recent advances in technology to eliminate the paper chase and with it, the bottleneck that slows the receipt of your tax refund. By whittling away at the labor-intensive, error-prone paper-handling and data-entry activities, the agency says it can deliver the performance improvements the public demands.

During the next several years, the agency will roll out imaging and automated character recognition on a grand scale. Fundamentally, it hopes to substitute electrons for 2.5 billion pieces of paper annually while knocking at least a week off the time taxpayers have to wait for their checks.

IRS, page 26

Taxing Times for Treasury IS

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When we created the new Compaq LTE Elite, we asked a far more challenging question: How can we make your life easier?

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Refusing to compromise, we found a way to create a built-in AC adapter. So the LTE Elite is the only full-function notebook that's completely self-contained – right down to the integrated trackball.

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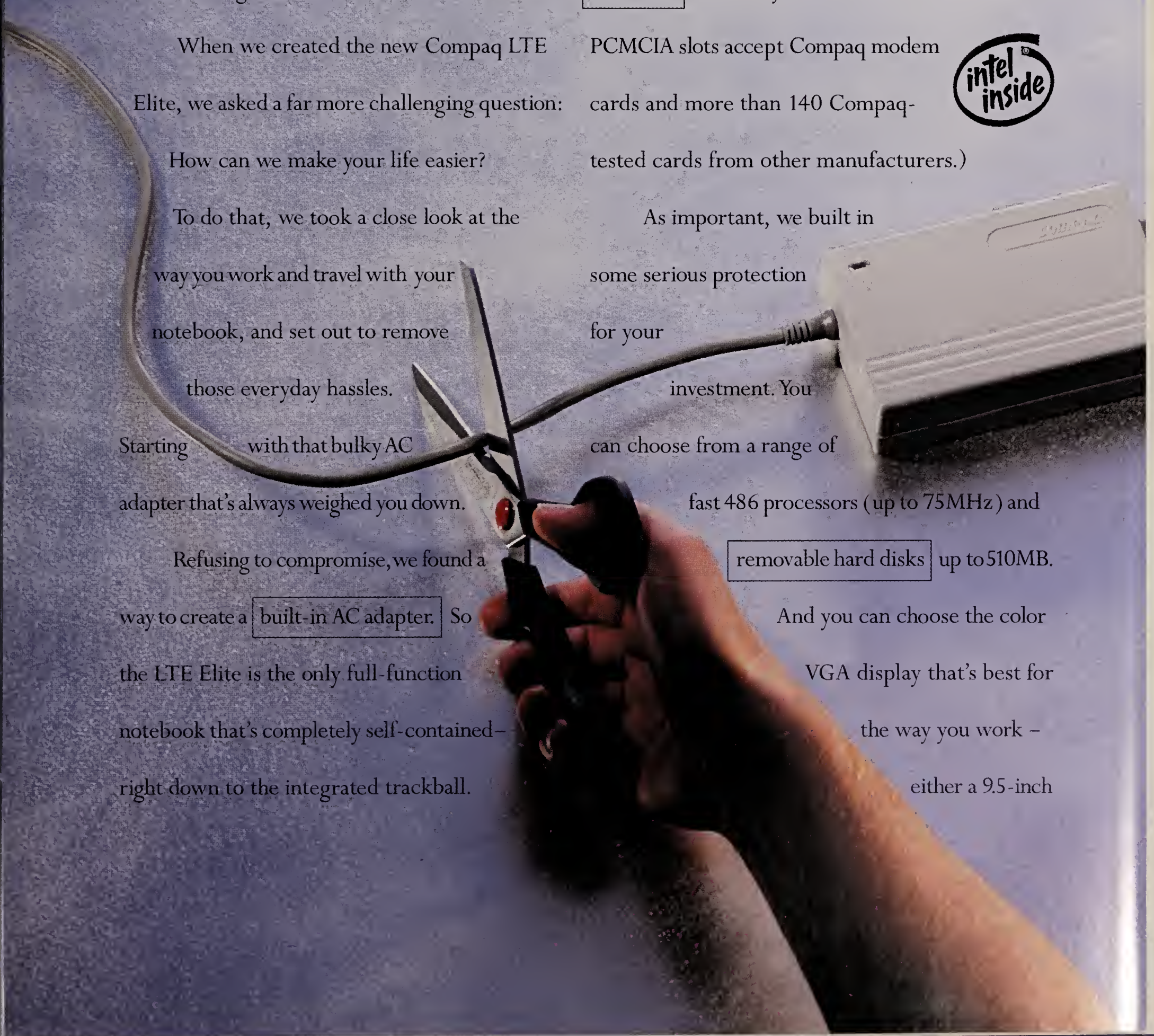

dual-scan passive-matrix screen or a crisp 9.5-inch active-matrix screen.

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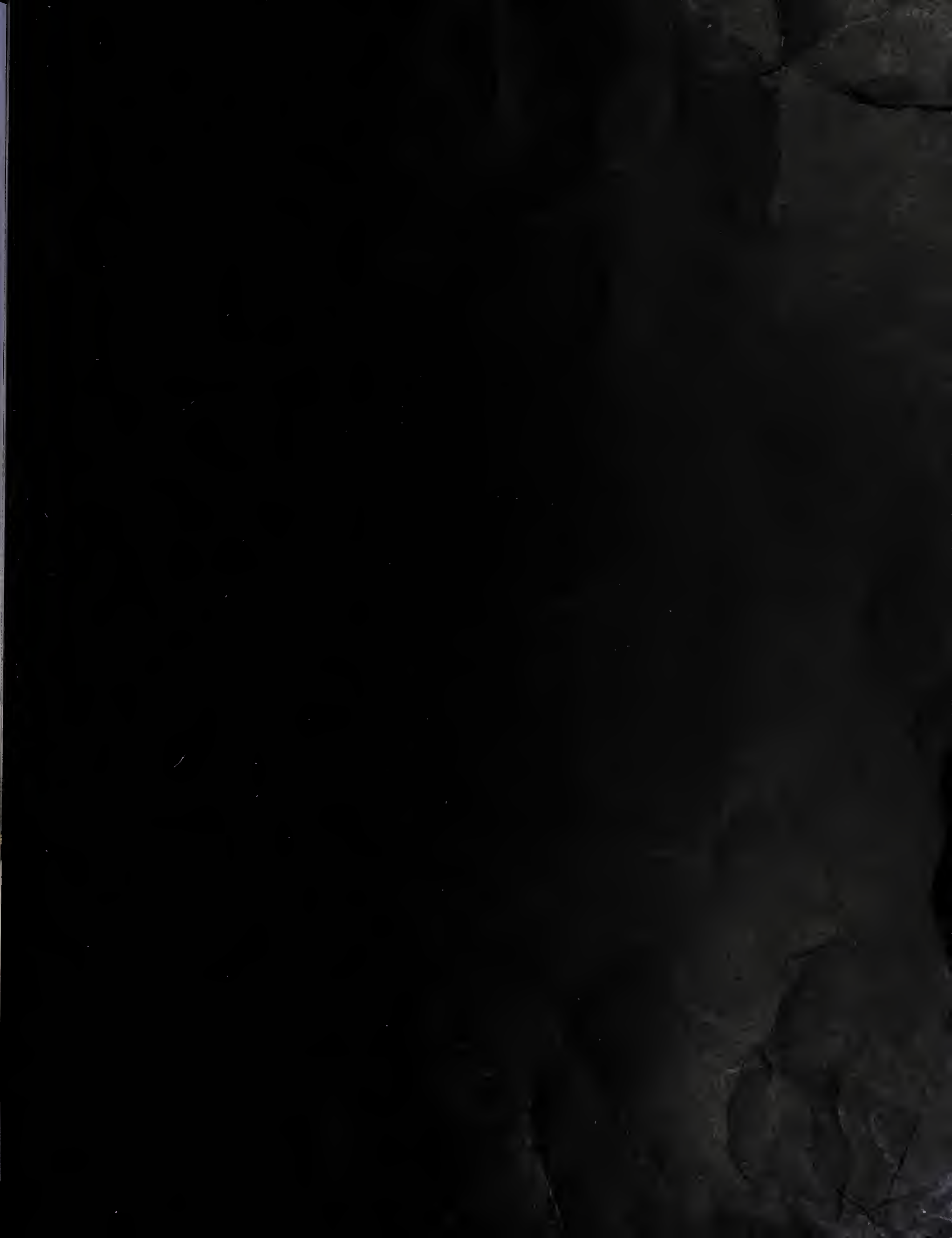

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COMPUTERWORLD

Pilot hits the runway with first end-user app

By Rosemary Cafasso

■ Pilot Software, Inc. last week put more meat on the bones of its business analysis software strategy with a sales and marketing package, its first end-user application.

Pilot, which had approximately $37 million in sales last year, sells the Lightship multidimensional database management system and associated development tools, making it a contender in the emerging on-line analytical processing (OLAP) market.

OLAP is essentially an emerging market that brings together a variety of tools for end-user data access, including executive information systems, decision-support tools and multidimensional databases.

Checking out scenarios

Pilot's Sales and Marketing Intelligence System is a front-end application to the Pilot multidimensional database server. It provides users with a set of graphical point-and-click desktop modules to perform queries against sales and marketing data. The software includes such query modules as a ranking function and an "80/20" analysis, which can show top performers in sales or products for a given market.

Multidimensional technology is typically a database that is optimized to perform complex queries quickly by incorporating techniques such as predefining answers or subtotaling data. Using the multidimensional database technology, the pilot application allows users to slice and dice data to get several different scenarios.

Ingersoll-Rand Co. in Woodcliff Lake, N.J., is currently moving the Pilot database and Sales and Marketing Intelligence System into production. They selected it because of its quick query capability.

"I was a disbeliever," said Bob Morris, a group manager for IS in the production equipment group at Ingersoll-Rand. "They had to prove it to me. I can tell you, it gives us instant access to information."

More than OLAP

Bob Johnson, a senior analyst at Dataquest, Inc., said the Pilot application is a good move because it provides a more real-life reason to look into OLAP.

"When you discuss OLAP, it's tough to get a handle on it," Johnson said.

On the OLAP front, Pilot competes with companies such as Information Resources, Inc., Arbor Software Corp. and Keenan Technologies.

Clare Gillan, an analyst at International Data Corp. in Framingham, Mass., agreed it is a good move for Pilot partly because some of its competitors, most notably Information Resources, already have application offerings for their multidimensional databases.

"It is definitely a good approach," Gillan said. "The second most common decision-support requests after financials is sales and marketing."

The Sales and Marketing Intelligence System uses a client/server architecture. The server piece runs on Hewlett-Packard Co.'s HP/UX, Sun Microsystems, Inc.'s Solaris or IBM's AIX. The client portion runs under Windows.

The company is now shipping beta copies of the application, with a planned general availability date of December. The software carries a $95,000 license for a 25-user system.

Pilot has a deal pending with The Dun & Bradstreet Corp., which intends to acquire it for an undisclosed amount. The acquisition, announced in July, is awaiting regulatory approval.

If approved, Pilot would become one of several Dun & Bradstreet business units, such as Dun & Bradstreet Software.

Raw power is Cray's low-end lure

CONTINUED FROM PAGE 75

with the J916.

"Just plain old marketing has been kind of a foreign concept at Cray," Hogberg said. "We've been a word-of-mouth technology vendor and that works at the high end. But we need to make ourselves more broadly known" in order to compete more successfully for general-purpose industrial business.

There are a lot of other technical computing choices in the J916's price range, which runs from $225,000 to about $2 million. IBM and Silicon Graphics, Inc. both sell RISC multiprocessors in that market, and workstation clusters can also be used to run the compute-intensive simulations and design applications that the J916 is meant to address.

Altair previously relied on a network of "every supercharged workstation you can think of," but moving to Cray's vector supercomputers was "a major step forward," Price said. Small tasks are still handled by workstations, "but the Cray is the bulldozer that we use to load up the big analysis jobs," he said.

Being competitive

Smaby noted, though, that Cray cannot depend simply on number-crunching capabilities to carry the day in the low-end market. "Machoflops are less important in this category than they are with the big iron," he said. "It all gets down to how competitive they are on specific applications."

The J916 runs the same instruction set as Cray's high-end systems and has about 600 third-party applications available as a result. While that number is small compared with the number of packages that run on workstations and RISC systems, Smaby said, Cray's count is purely technical while the other platforms include commercial applications.

Briefs

Ups and downs at AT&T

AT&T Global Information Solutions cut prices by 15% on the transaction processing configurations of its massively parallel System 3600 hardware. Models sold for decision-support applications were reduced even more, dropping by as much as 37%.

At the same time, though, the company said it increased prices on its Teradata database by unspecified amounts "in keeping with industry trends."

EDS lands contract

Electronic Data Systems Corp. said it won a nine-year, $364 million outsourcing contract with the South Australian state government.

IBM names Olympic director

IBM named Elizabeth Primrose-Smith director of worldwide Olympic and sports operations. She will be responsible for its technology deal with the International Olympic Committee and other sports matters.

Systems software for HP

4th Dimension Software Ltd. in Irvine, Calif., recently announced its Enterprise ControlStation systems management software for Hewlett-Packard Co. HP 9000 Unix servers at the Interex HP users conference. ControlStation is a centralized, console-based systems management package that runs on Digital Equipment Corp. VAX systems, IBM AS/400s and IBM MVS mainframes. The HP version, priced from $25,250, will ship Nov. 1, according to 4th Dimension.

IBM group hires consultant

Thomas B. Henry, a former information systems executive at Melville Corp. and Payless Shoe Stores, has joined **IBM Consulting Group**'s Retail and Distribution practice as a principal.

Sequent channel switching

Sequent Computer Systems, Inc., which last January folded channels and sales into its operations units, said that move generated too much channel conflict. It has set up a new worldwide field operations to oversee channels and direct sales.

Get results like these when you migrate from an IBM mainframe to Unix.

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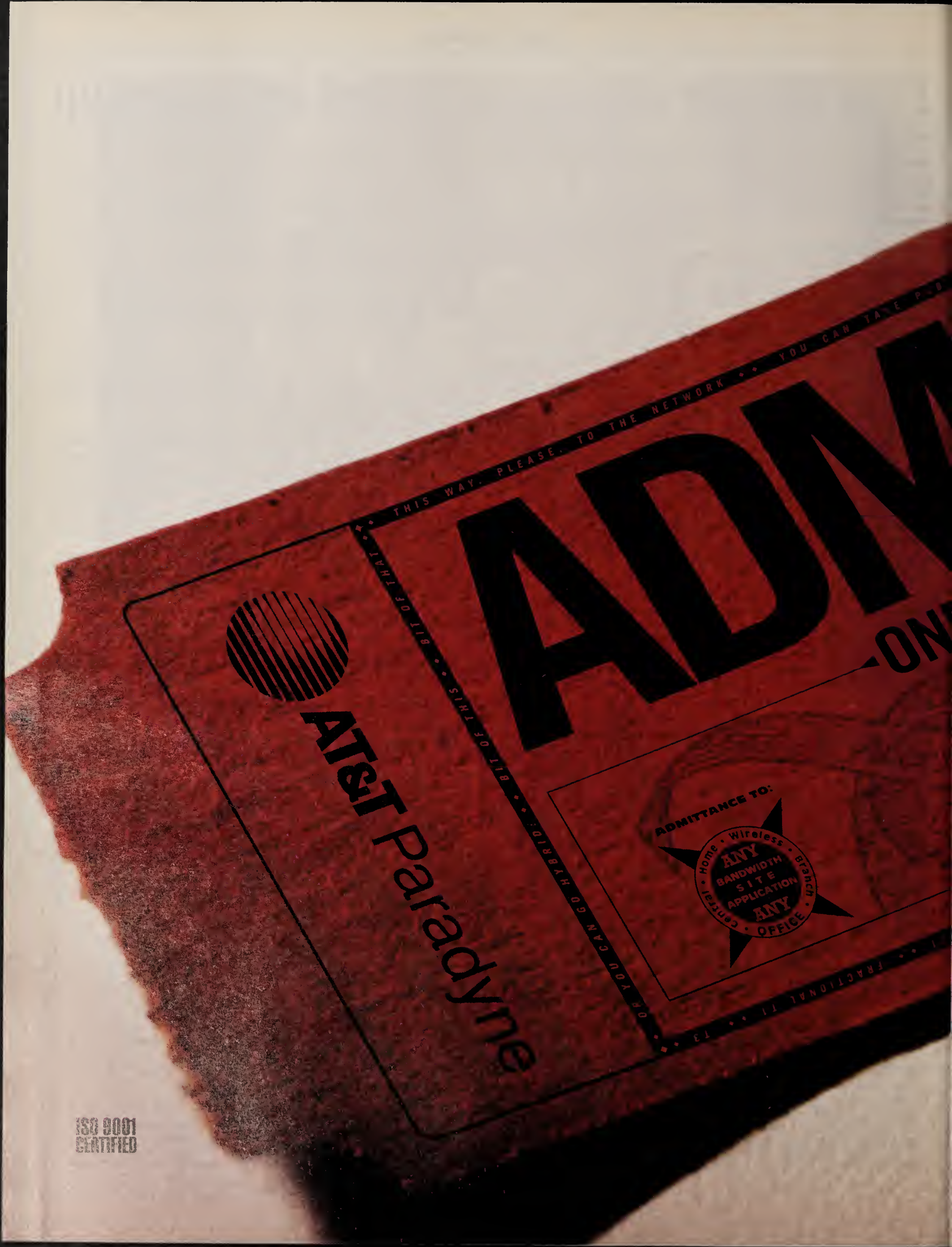
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New Products

XL/Datacomp, Inc. has announced 9638 Models 220 and 240, high-performance disk subsystems for IBM midrange computers.

According to the Lisle, Ill., company, the models let users add an eighth head-disk assembly to increase storage capacity to 15.7G bytes in unprotected mode and 13.8G bytes in protected mode.

The subsystem's standard Fast Write cache has been upgraded to 1M byte, and standard-read cache has been upgraded to 16M bytes.

Prices start at $34,920 for the 220 and $59,470 for the 240.

▶ *XL/Datacomp*
(708) 434-1200

Adpac Corp. has announced System Vision Year 2000, a date conversion product for the year 2000 for MVS environments.

According to the San Francisco firm, System Vision Year 2000 identifies all date occurrences and pinpoints the location of the affected application code on a systemwide basis.

A what-if modeling feature evaluates various possible change methods and their budget impact based on the user's cost assumptions. The product also prepares a resource and cost estimate report. System Vision Year 2000 then guides the programmer through the code step-by-step to make the necessary changes.

System Vision Year 2000 costs $40,000.

▶ *Adpac*
(415) 777-5400

Firesign Computer Co. has announced Outbound for VSE, a mainframe-to-desktop file transfer system for IBM's VSE/ESA and Parallel Enterprise Server.

According to the San Francisco company, Outbound for VSE lets the VSE host initiate file transfer with PCs and Unix workstations. The product transfers data files, software and backups.

Users can upload data from remote desktops, perform remote printing, distribute software to branch offices and backup PCs and network servers.

Prices start at $10,000.

▶ *Firesign Computer*
(415) 398-7228

Ross Systems, Inc. has announced Renaissance CS, a family of financial, manufacturing and distribution client/server applications for the RS/6000.

According to the Redwood City, Calif., company, Renaissance CS modules will be available for Oracle Corp. and Sybase, Inc. databases.

Ross' client/server architecture lets users run the suites on terminals or desktop PCs, the company said. Suites include Renaissance CS Financials, Renaissance CS Manufacturing and Distribution and Renaissance CS Human Resources.

Prices range from $35,000 to $50,000 per application.

▶ *Ross Systems*
(415) 593-2500

Eicon Technology Corp. has introduced Access for Windows NT 3270 and Access for Windows NT 3250, 32-bit SNA desktop connectivity products.

According to the Montreal firm, the products provide Windows NT users with seamless access to IBM mainframe and AS/400 midrange applications.

The products can also be combined and run on a desktop as a single application that allows concurrent access to mainframes and midrange systems. LAN installation and management utilities and application programming interfaces are included.

Prices range from $395 to $17,500, depending on the number of users.

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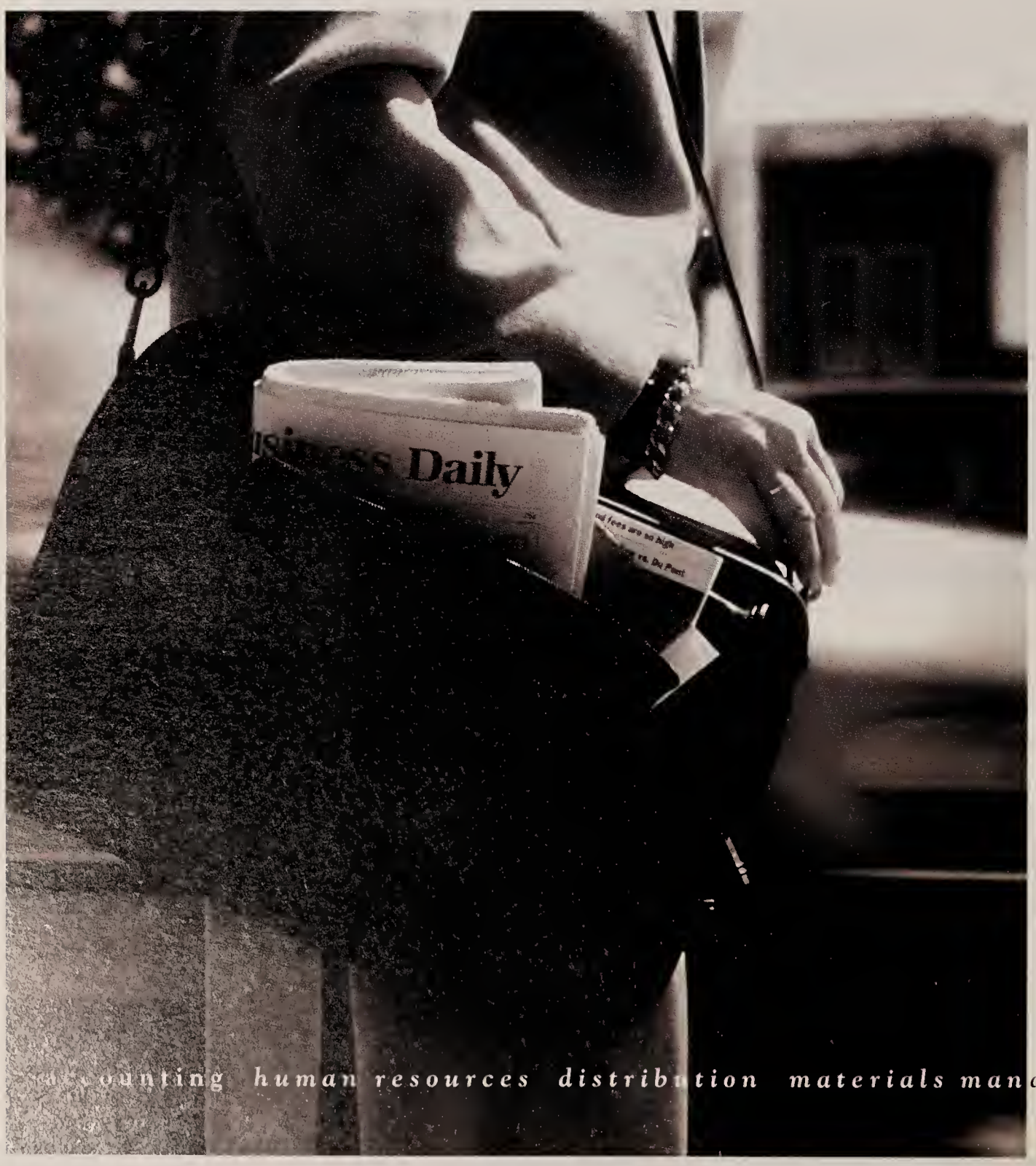

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OS/2 development tools come to life

By Ed Scannell

■ Users who have developed applications under OS/2 over the past few years have had to be a brash bunch of rugged individualists.

So it is not surprising that some of these users have reacted coolly to the recent surge in OS/2 development tools. After a few years of "rolling their own" applications with whatever they could find, some users said the new offerings will have to fit in with what they already have.

"We aren't exactly sitting out here just dying for something to come our way. We have taken it on ourselves to go out and find what we needed," said Frank Petersmark, technical services manager at Amerisure Insurance, Inc., a large regional insurance company in Southfield, Mich.

But a rugged individualist is not someone who is unforgiving. Many customers say they will take a hard look at these offerings, particularly those expected shortly from IBM (see chart).

"Developers have been so focused on the Windows market the last few years it seems they have left OS/2 behind. But lately there is a lot more stuff coming for OS/2. So we plan to take a look at some of it before we move on," said Scott Samuelson, a senior systems analyst at the Washington Public Power Supply System in Richland, Wash.

Leading this resurgence in the OS/2 tools market is IBM, which last week announced three development tools that let programmers create object-oriented desktop applications under OS/2. The tools essentially have the object-oriented VisualAge graphical environment layered over versions of Cobol, C/Set++ and Smalltalk [CW, Oct. 3].

Tools, tools and more tools

IBM last week announced a series of MVS-based programming tools. These tools will let programmers create and deploy object-oriented applications that run on the mainframe and OS/2 desktops.

"IBM is finally recognizing that they have to take care of their OS/2 customers. A year or two ago that was not the case," Petersmark said. "I think IBM was unsure of what its overall strategy for OS/2 was back then."

Development denizens

IBM AND SOME THIRD-PARTY OS/2 DEVELOPMENT TOOLS

IBM OS/2 desktop tools announced last week:

- VisualAge for Windows 2.0
- Cobol for OS/2
- VisualAge for C/Set++

IBM micro-based tools for MVS announced last week:

- Version of C++ for MVS
- Version of Smalltalk for MVS
- SOM and DSOM objects for MVS

Recent third-party OS/2 and MVS tools announcements:

- HockWare, Inc.'s VisPro/C and VisPro/C++
- Compuware Corp.'s Preditor/2
- Micro Focus, Inc.'s Cobol for OS/2

Amerisure is deploying a client/server application that will move its commercial underwriting processing business from the mainframe to OS/2 desktops. The company initially had purchased an all-purpose DOS-based insurance package but soon found it had too many limitations, particularly when accessing host-based databases.

To compensate for these limitations, Amerisure created a suite of object-oriented applications and tools that surround the DOS-based package. This suite, called the Client Management System, feeds the mainframe with more detailed information. This, in turn, allows the mainframe to provide agents with more complete policy information.

To create the Client Management System, Amerisure primarily used Easel Corp.'s Enfin series of tools and Micro Focus, Inc.'s version of Cobol. The company also used other object-oriented tools to complete the project, including those from IBM.

Washington Public Power also has used a variety of tools — including IBM's C/Set compiler and Hockware, Inc.'s VisPro/C++ for graphical interface design — and has taken a look at IBM's VisualAge products.

Tools, *page 91*

Users fume over Oracle's Windows-first attitude

By Kim S. Nash
SAN FRANCISCO

Oracle Corp. unveiled a new release of its Cooperative Development Environment (CDE) tools at its user conference here last month. But CDE 2.0 and upgrades to Oracle's computer-aided software engineering (CASE) tools reflect a new "Windows-first" attitude that has riled some Unix and Macintosh devotees.

On one hand, users are happy to see Oracle tools able to operate on the popular Windows platform. "It's exciting stuff. Looks like they're stepping into the modern world," said Kevin Loney, a corporate database administrator at Astra/Merck in Wayne, Pa.

But on the flip side, several user group attendees angrily questioned a panel of early CDE users and an Oracle executive about the company's plans for CDE and CASE.

New day

Oracle intends to lure Microsoft devotees with upgraded development tools that support several Windows features

Tool category	Product	Availability
Data	• Browser 2.0 • Objects for Windows 1.0* • Data Query 4.0 • Glue 1.1	By year's end
Tools	• Procedure Builder 1.5* • Forms 4.5 • Reports 2.5 • Graphics 2.5	First-quarter 1995
CASE	• Process Modeller 1.0* • Forms Generator 4.5 • Reports Generator 4.5 • CASE Exchange 3.0	Second-quarter 1995

*New

What's it gonna be?

Several steamed users stood up to complain about a mixed message from Oracle executives on whether new key CASE tool enhancements would be available on platforms other than Windows.

While CDE products will be ported to Unix and Macintosh and will support character-mode systems, new CASE tools and other products may not be ported to those platforms.

"For CASE, the only committed platform is Windows," acknowledged Peter Jensen, senior product manager for CDE. However, Jensen added, while corporate developers would need to use a Windows PC for design and generation, the resulting applications could then be deployed on Windows, Unix, Macintosh or OS/2.

Make yourself heard

A panel member suggested that dissatisfied customers protest. "If you speak up, you can change direction," said Tammy Lowe, manager of application development at Burlington Coat Factory Warehouse Corp. in Lebanon, N.H.

Lowe said the technique worked for her recently in coaxing Oracle to put CASE and CDE tools on the same shipping schedule, instead of rolling out the two categories of product separately. "We pushed and screamed, and now Oracle is trying to do that," she said.

Burlington Coat, Delta Air Lines, ITT Hartford and other large Oracle sites are part of a tools advisory council to Oracle that, until last month's user group meeting, did not include CASE users.

CDE 2.0 is an umbrella term for three types of development products: data access, tools and CASE (see chart). Tools and access packages are in beta testing now, and CASE is scheduled to enter the beta test phase this month, said Dennis Moore, CDE product marketing manager.

Among the new offerings, CDE 2.0 includes Project X, a single-user edition of the Oracle 7 database intended to compete head-on with the likes of Microsoft Corp.'s Visual Basic, Powersoft Corp.'s PowerBuilder and Gupta Corp.'s SQLWindows.

The tool set marks Oracle's foray into the object-like realm, with support for Microsoft's implementation of Object Linking and Embedding (OLE) 2.0 and VBX 3.0 functions. In comparison, PowerBuilder supports OLE 1.0 and VBX 1.0.

Despite the added functionality, pricing policies may prevent Oracle development tools from going over well with everyone, said Vince O'Rourke, a software consultant at Networked Computer Systems in Salt Lake City.

Oracle's history of charging users for runtimes has deterred potential customers who want to deploy applications built with the tools to many users, O'Rourke said.

"They're great tools, but I can't sell them," he said.

Pricing for CDE 2.0 tools is not yet set but should be "on the order of $2,000 per developer and $150 per user for an average configuration," Moore said.

Official pricing for Project X is also not finalized but is likely to be less than $500 per copy, according to a source at Oracle. The company is also considering not charging for Project X runtimes, according to a third-party applications provider.

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"What you need for client/server is a partner who's animated."

Another IBM Client/Server Success.

Warner Bros. Studio Stores are opening about as fast as a...beep beep...*Roadrunner*, and a big part of their business is original artwork, or cels, from Warner Bros. cartoons.

"No two production cels are alike, yet each one has to be available in all of our 100 stores, simultaneously," says Karine Joret, Vice President, Worldwide Marketing.

What Joret needed was a client/server system that could 1) display cels in perfect detail, 2) be easy enough for any user, 3) make it impossible for two customers to order the same cel and 4) integrate smoothly with their existing point-of-sale system.

Karine Joret
Vice President
Worldwide Marketing

"We also needed a vendor who really knew retailing and could do the entire job, at our speed. It was IBM."

What IBM created is an OS/2®-based multimedia system with touchscreen PC clients in stores and a server in Burbank, all tied in to a RISC-based network for point-of-sale. IBM wrote the application software and helped build facilities for digitizing images at the Warner Bros. Studios.

"Now," says Joret, "instead of flipping through photocopies, customers browse on a screen, and the instant a cel is bought it's pulled from the system, even as other customers browse in other stores. It's exactly what we asked for.

"As upcoming animated films, such as the *Roadrunner*'s 'Chariots of Fur,' create more demand for our products, our business grows and our needs change. IBM is always right there with us; I can't tell you how helpful that is."

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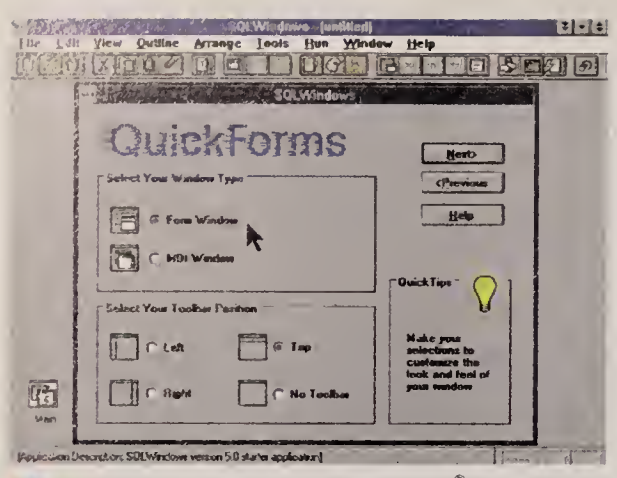
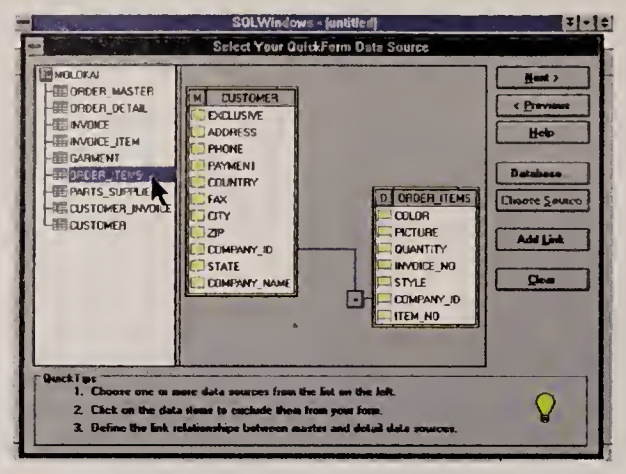
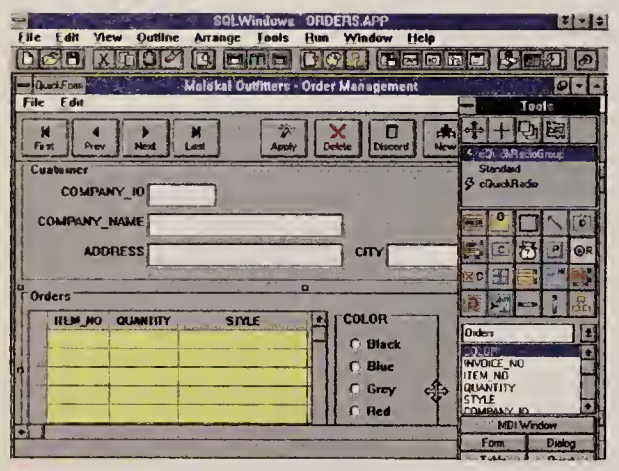


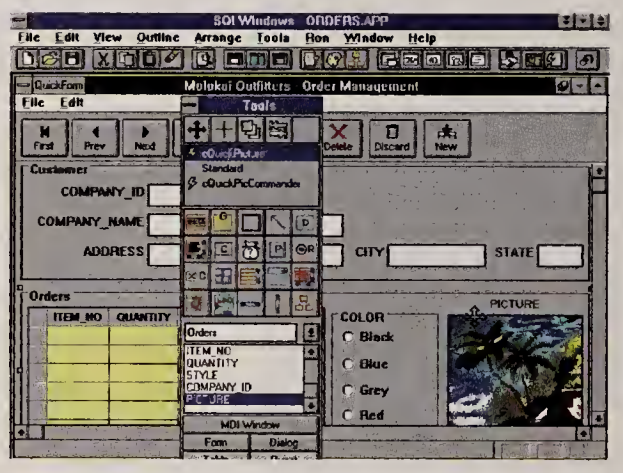
1 Relax and take a deep breath. SQLWindows® is your quickest way to build and deploy problem-solving applications just like this one. For the quickest start, choose a QuickForm to lay out your application and make all the appropriate connections.



2 QuickForms let you choose data from any database, identify fields and automatically create master detail links. A simple button click generates your QuickForm. By the way, xBASE and Paradox® data drivers are included to help desktop developers move up.



3 Next, customize your QuickForm by choosing QuickObjects from the tools palette. Each QuickObject chosen will be automatically linked to your data sources. In this case, just drag and drop a QuickRadioGroup so users can select shirt colors with intuitive radio buttons.



4 What good are color selections in a Hawaiian shirt company if your can't see them? SQLWindows applications can easily incorporate graphical data from any file, OLE server or database, with the QuickPicture QuickObject. Just place and size the picture box in your form. See? You still haven't written a lick of code!

When Molokai Outfitters opened their new branch warehouse, QuickObjects from Gupta kept their finger off the panic button. Only available in SQLWindows 5.0, QuickObjects made sure Molokai's critical sales order entry application got delivered in a flash!

Quickly build powerful client/server applications.

Now, client/server applications are in your grasp. New QuickObjects from Gupta make "drag & drop" application development a productive programming alternative to dreary, repetitive coding. In fact, any developer can now build full-featured client/server applications regardless of prior experience. Novices can skip complicated coding and veteran developers can boost productivity before resorting to code for extended functionality.

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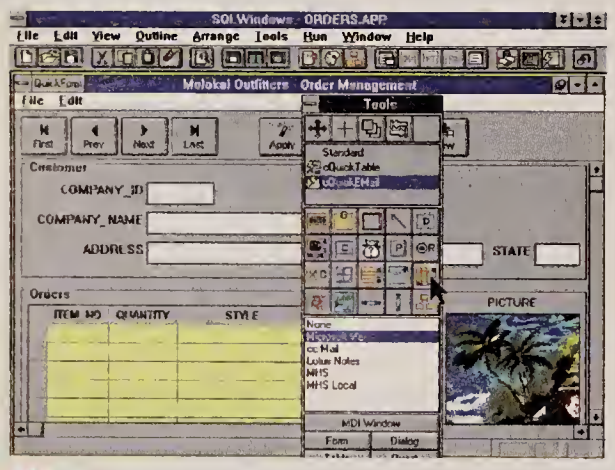
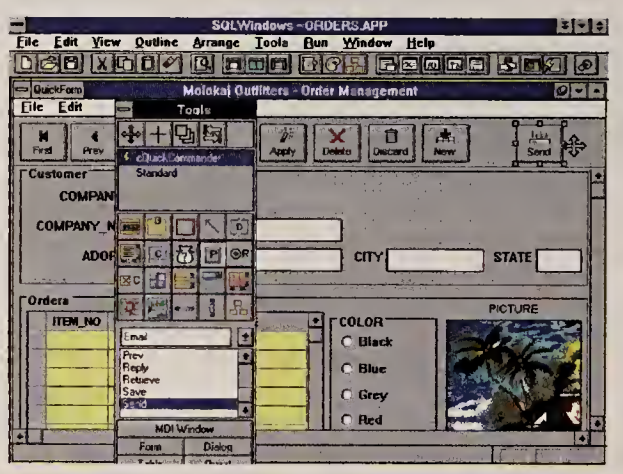
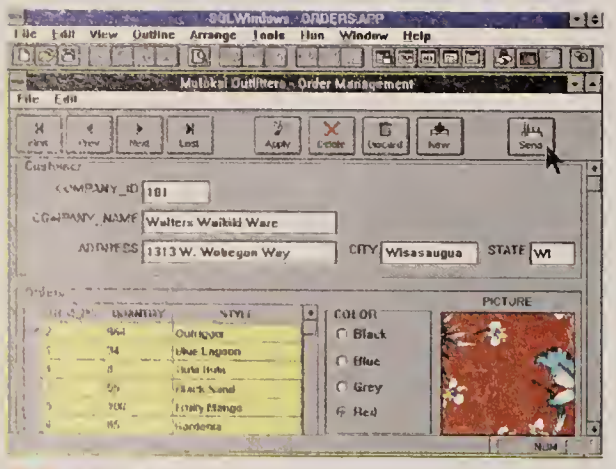
How QuickObjects™ from Gupta kept Molokai from losing its shirt.



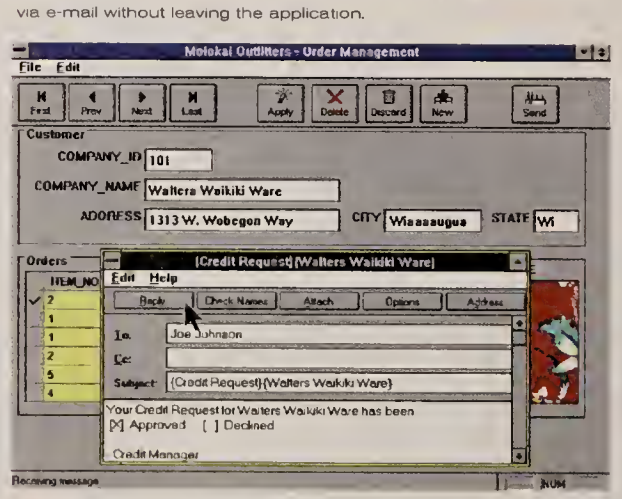
5 Painless workgroup integration is just a point-and-click away. Select the QuickEmail object, choose your mail system from the options listed and drop an e-mail data source into your form. Now users anywhere on the network can be notified when an order affects them or raquires some action on their part



6 For instance, each order will require credit approval. This calls for an e-mail QuickObject, a pre-defined pushbutton with built-in code to execute e-mail tasks. To run credit checks via e-mail, choose the "Send" e-mail QuickObject and drop a "Send" button on your form's toolbar. Now any user of the application will be able to notify the Credit Department when an order is placed and secure their approval to ship – all via e-mail without leaving the application.



7 Now test your application. Click on the "Run" button in the SQLWindows toolbar. Any errors will be flagged by the integral debugger and a runtime application will be created. Then, for blazing speed, just punch the adjacent SQLWindows Compiler button to tap the performance of the industry's first 4GL compiler.



8 Congratulations. You've just built a powerful client/server mail-enabled application that integrates graphical and SQL data anyone can use. And you did it in less than 15 minutes! Now, *Walter's Waikiki Ware* in Wisconsin will get the 72 dozen Outrigger shirts they need by next week and you'll be modeling Molokai Outfitters' latest styles on the very beaches that inspired them.

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Developers praise Microsoft's new Visual C++ release

By Melinda-Carol Ballou

Developers with early access to Version 2.0 of Microsoft Corp.'s Visual C++ development tools and compiler had good things to say. They especially lauded the better integrated editing and debugging resources and the joint 16-bit and 32-bit tools.

Previously, customers had to buy one product to develop 16-bit applications and another for 32-bit applications. Now, via a single development environment, users have access to one version of the tools for 32-bit development (Release 2.0) and another for 16-bit development (Release 1.5). Optimally, Microsoft should offer the same version of the product for both 32-bit and 16-bit development, some developers said.

What's in it?

Visual C++ 2.0 Development System and Tools includes Visual C++ 2.0 for Windows and Windows NT, the Visual C++ Version 1.51 for Windows and the OLE Control Developer's Kit.

The new version includes the following features:

- Support for Win32's application programming interface to create 32-bit applications for Windows NT, Windows 95 (the next version of Windows) and Windows 3.1.
- Support for 32-bit Object Linking and Embedding (OLE) and Open Database Connectivity using Microsoft Foundation Classes Version 3.0.
- Integrated editing tools and a new project manager.
- Templates and exception handling.

The release is a significant leap over Version 1.5 in terms of its integration of resources, said Joe Schwartz, a consulting engineer at Bankers Trust Co. "They finally produced, in our opinion, a world-class development tool."

Of particular interest to Schwartz's group is Version 2.0's increased ability to create OLE applications because OLE development is "intimidating at best, if not daunting," he said. Key features for easing that process include support for OLE automation servers and generation of Dynamic Link Libraries though Visual C++'s AppWizard. Before now, "you had to do it all by hand, which could take hours and hours," Schwartz said.

He added that the ability to target operating systems such as NT allows for much greater productivity. "If you crash during the debug cycle, for instance, you can kill a process and recover the machine without having to reboot," Schwartz said.

For Jim Bohannon, an engineer at Perkin Elmer Corp.'s Applied Bio Systems Division in Foster City, Calif., the integrated development environment and increased speed are key differentiators.

"The integration of the resouree editing in the same development environment means now [the work is] all done in one place," Bohannon said. "And the compile speed is very good in this release."

Microsoft is also offering a subscription service, which will deliver Visual C++ updates to developers three times per year via CD-ROM. Visual C++ 2.0 on Intel Corp. platforms and Visual C++ Subscription 2.0 are available for $299 and $399, respectively. Editions of Visual C++ 2.0 for Mips Technologies, Inc.'s R4000 series, Alpha AXP and Macintosh systems are expected by year's end.

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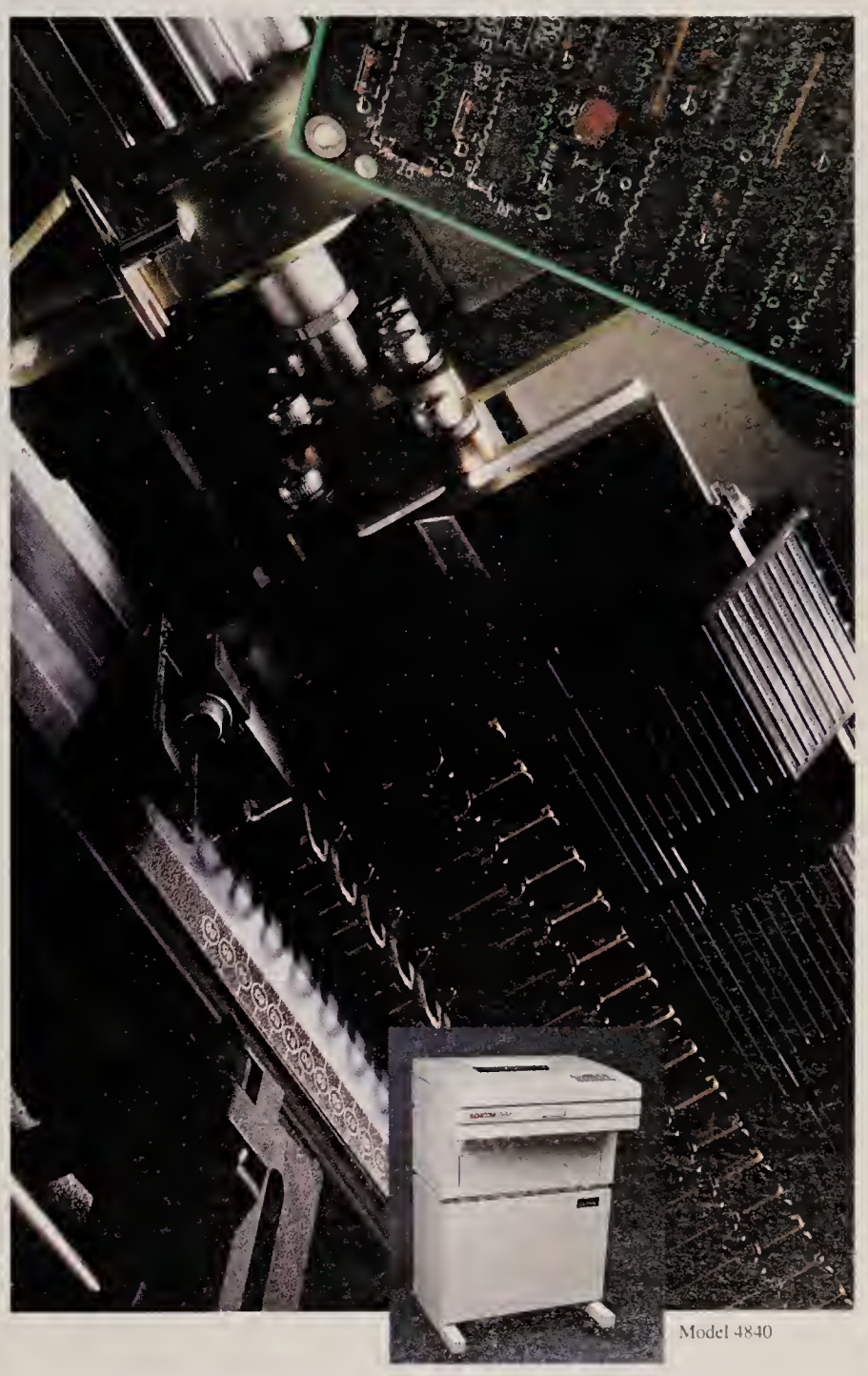

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The GENICOM Advantage

TI adds graphical tool set

By Melinda-Carol Ballou

Following up on its attempt to push into the client/server tools arena a year ago, Texas Instruments, Inc. recently released a new graphical version of its Information Engineering Facility (IEF).

Despite its client/server hopes, IEF has in the past been perceived as an inflexible tool set aimed primarily at the information engineering and mainframe world by a conservative company, industry analysts said.

Breaking out of that mold is no easy task. For instance, attempts by competitor KnowledgeWare, Inc. to scale down from the high-end computer-aided software engineering market were singularly unsuccessful. Now close to bankruptcy, KnowledgeWare is expected to be acquired this month by Sterling Software, Inc.

Never give up

Rather than seek tools elsewhere, TI spent several years rearchitecting IEF. The current release, renamed "Composer," focuses on ease of use and the event-driven, visual development capabilities typical of popular lower-end tools such as those from Powersoft Corp. and Gupta Corp.

"Their GUI is now useful, though it's not leading-edge," said Ed Acly, an analyst at International Data Corp., a consultancy in Framingham, Mass. "You can start to see the big client/server scenario rolling out within the context of the [strong] back-end support and network piping they have."

IEF users familiar with the tools said they are pleased by the increased productivity with the new version and are creating pilots for transaction-intensive, complex, high-end client/server applications.

"The GUI version adds a lot of the bells and whistles we didn't have before," said Jacque Reese, an information engineer at PSI Energy, an electric utility located in Plainfield, Ind. These include color, the ability to change fonts and icons, and tool bars.

Tom McMinn, information engineering group manager at insurance company Chubb & Son, Inc. in Warren, N.J., is using IEF tools to create an application that will ultimately target 6,000 to 8,000 users. The application will replace systems supporting product development, product sales and product archiving, McMinn said.

While industry analysts said TI's direction is a positive one, they added that the company may have trouble moving beyond its current user base. Chubb, for instance, was already an IEF site.

TI must also deliver on a promised strategy for component-based development, which is not expected until next year.

"It's a vision; it's not a product at this point," said Jim Sinur, an analyst at Gartner Group, Inc. in Stamford, Conn.

Features

Composer Workstation pricing starts at $11,000 and the Composer LAN Encyclopedia starts at $20,000. A sampling of new features in this release include the following:

- Advanced graphical user interface.
- Ability to access multiple servers from a single client.
- Support for remote presentation, remote data, distributed process and partitioning.
- Support for native TP monitors and Novell, Inc.'s Tuxedo.

Briefs

Novadigm, Intersolv alliance

Novadigm, Inc. and **Intersolv, Inc.** announced a strategic alliance to jointly develop and market an interface that couples Novadigm's application deployment platform, EDM, with Intersolv's PVCS configuration management software. Joining these tools will allow developers to use EDM's configuration manager to distribute applications to authorized client desktops whenever a software change is promoted through PVCS.

SunSoft, Electronic Book join

SunSoft, Inc., the software division of Sun Microsystems, Inc., said it has started an alliance with Electronic Book Technologies, Inc. in Providence, R.I., to license the firm's DynaText technology for cross-platform document creation and browsing. The two firms also said they have agreed to start joint development of a universal browser that works with SunSoft's existing AnswerBook on-line text-delivery system and a future version of Sun's Solaris operating system. A prototype is due by year's end, SunSoft said.

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without losing touch with y

Tools

CONTINUED FROM PAGE 85

It also crafted an application that makes it easier for PC users to retrieve data from host-based systems and wrote a program that enables users to access multiple server domains with a single log-on.

"We also did a quick and dirty program — in fact we called it Quick and Dirty — where using LAN Server we can now check for open files on users' systems to see what they are using," Samuelson said. "It is a tracking program for our managers that tracks software usage."

Looking to Big Blue

While users said the potpourri of OS/2 tools usually produces satisfactory application results, most wish someone, especially IBM, could provide them with a more integrated approach — a method to tie the tools together or provide an enterprisewide repository.

"We are making do with a little piece here and a little piece there. Getting all these pieces under one roof would be nice," said Judi Krizan, senior systems programmer at Amerisure.

Bank of Canada will use IBM's VisualAge object-oriented programming environment to create a middleware product that will give OS/2 users better access to databases running under IBM's MVS mainframe operating system.

While they like what they see in VisualAge, information systems executives at the bank would like a repository in which they can store their micro-based programming tools. IBM's star-crossed Repository Manager was intended to be that central facility but has never become a reality.

"VisualAge has its own class libraries; C++ has its own class libraries, but we need a place to store all the architectural definitions at the enterprise level. Right now people are storing them down in various microcomputer-based products," said C. K. Wong, a senior programmer at Bank of Montreal. "I think the problem is too tough to be solved by any one company," Wong said.

"We really do need a way to move source code from our mainframe to our off-host development repositories and back," said Bob Holmes, senior technical consultant at Southern California Gas Co.

A major stumbling block is how to find a specific tool that addresses a specific application need. Because many of these tools providers are small and have little money to market their products, they usually do so directly one or two at a time. In some cases, they market their wares through out-of-the-way electronic bulletin boards.

"Part of the problem is that IBM has not done a very good job getting that sort of information out to people," said Frank Randell, senior systems analyst at Nevada Gas and Power. "For instance, we got a REXX-based [OS/2] program off a bulletin board that did exactly what we wanted for automating some processes we had coming off the mainframe."

New Products

InfoAeeess, Inc. has announced Guide Reader DLL, a Dynamic Link Library (DLL).

According to the Bellevue, Wash., company, Guide Reader DLL lets developers embed hypertext-structured documents in a Windows-based host application.

Features include bookmarks, annotations, full-text search, hypertext links and navigation.

Prices start at $10,000.

▶ *InfoAccess*
(206) 747-3203

Aeeess Softek has announced the Plug-In EPS Vector Import Filter, a Windows Dynamic Link Library (DLL) PostScript interpreter for Windows developers.

According to the Berkeley, Calif., company, the Plug-In EPS Vector Import Filter lets applications display complex vector graphics files.

The Plug-In EPS Vector Import Filter costs $4,995 as a DLL and $25,000 for the source code.

▶ *Access Softek*
(510) 848-0606

Compuware Corp. has announced Preditor/2, a code editor for OS/2 programmers.

According to the Farmington Hills, Mich., firm, Preditor/2 is a graphical 32-bit editor that can display multiple windows, search across multiple files and edit and compile simultaneously.

The product features a tag facility that lets programmers jump to variable declarations, class definitions or function starts.

Preditor/2 costs $149.

▶ *Compuware*
(313) 737-7300

RimStar Technology, Inc. has announced the RimStar Programmer's Editor for OS/2.

According to the Newfields, N.H., company, the RimStar Programmer's Editor provides a graphical user interface for OS/2, Windows and Windows NT programmers.

It provides a configurable, multithreaded, multidocument interface and keyboard mapping.

The RimStar Programmer's Editor for OS/2 costs $299. The Windows/Windows NT version costs $199.

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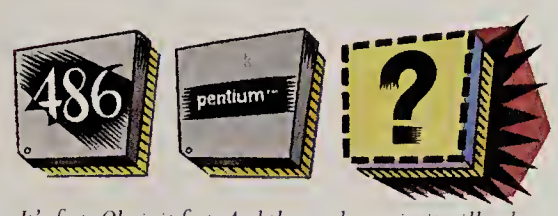

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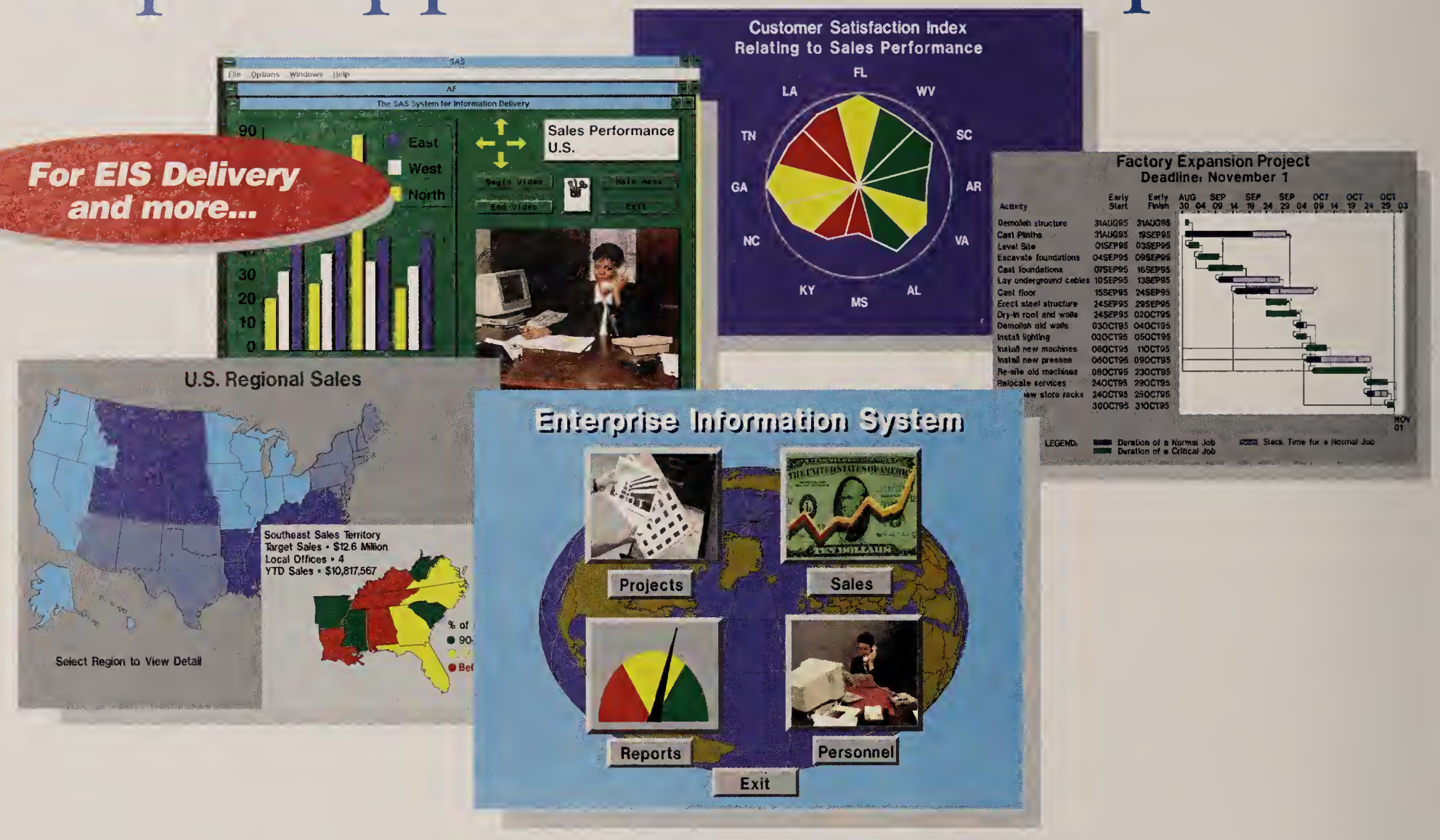

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Inside:
SIM conferees hear IS "Can't do it all."
See page 100.

INTERVIEW

with the COACH

STELLA JOHNSON

After seven years, ITT Hartford's Jack Crawford has found what it takes to manage IS/user teams: time, clear accountability and shared responsibility

By Julia King

WHILE INFORMATION SYSTEMS groups at many other large companies have only recently begun experimenting with IS teams, Jack Crawford, senior vice president of information management at ITT Hartford, is an old hand at it. Ever since 1987, the year the company downsized its IS ranks by some 500 people, Crawford's 1,500-person Information Management Division — the company's IS organization — has operated under what he calls a partnership model.

Under this scenario, the IS function remains centralized, but teams of IS staffers work with one of the company's lines of business, whose systems they develop and support. Within those businesses, users and IS staffers work side-by-side on development projects. Senior business managers have a say in what technologies the company uses and in how IS spends its $160 million annual budget.

In 1988, Crawford issued a brochure titled "The Information Management Team," which describes the corporate IS organization's mission, vision and goals. Six years later, he is particularly proud of the fact that little, if anything, in the brochure has needed revision.

"The really good news here at The Hartford is that IS has been operating with a lot of consistency," Crawford says. "You can go back and read what I wrote about setting direction back in 1986 and 1987, and a lot of that hasn't changed."

What has changed — and for the better — he says, is IS and business managers' and staffers' overall comfort level with the company's participatory IS strategy and its team approach to systems development.

Last month, Crawford spoke with *Computerworld* senior editor Julia King about his experiences at The Hartford. What follows is an edited version of that interview.

CW: Working in a team environment requires sharing information, which traditionally is equated with power in companies such as yours. How did you get people to cooperate and collaborate?

CRAWFORD: The bottom line is that the technology

Coach, *page 97*

At A Glance:

Jack Crawford worked his way up the management ranks to assume The Hartford's top IS post in 1982. In the past seven years, he has overseen a major IS downsizing and the reorganization of IS around teams. One of Crawford's chief accomplishments is making IS more accessible throughout The Hartford by sharing key technology and IS strategy decisions with non-IS managers. Within IS, he is known for actively soliciting feedback and ideas from staffers and for an overall open door policy.

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   - 22. Dir./Mgr. Network Sys., Data/Tele. Comm., LAN Mgr. /PC Mgr., Tech Planning, Admin. Services
   - 23. Dir./Mgr. Sys. Development, Sys. Architecture
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   - (a) Solaris
   - (b) Netware
   - (c) OS/2
   - (d) Unix
   - (e) Mac OS
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INTERVIEW

with the COACH

CONTINUED FROM PAGE 95

organization is only successful if the business is successful. In our company, [technology] is not an end to itself. Once you get that message across, people understand that their success is only in making the particular business that they support successful.

The other thing is that senior management is very computer literate. We've had significant investment in automation since the late 1970s. As we move to client/server and automate more of the professional functions, the heads of each of the market segments understand that their automation capability is a key dependency. They're as interested as I am in making sure that we're performing and operating correctly.

I share in the priority setting and the investment level with my peers [from the business units], so that helps alleviate this perception that IS is an island off to itself, doing something that nobody understands or hears about.

CW: Where does IS and senior management intersect?
CRAWFORD: I have a senior automation group that consists of each of the market segment heads and most of the business group heads. (The latter group includes heads of corporate departments such as public relations and government affairs).

What I do jointly with them is establish a direction for [IS]. The other thing [senior non-IS managers] share is infrastructure decisions. For example, right now we're trying to figure out how fast we can move into object-based development because we think that's a major opportunity. I don't sit in this office and close the door and decide that we're going to put a half-million or a million dollars in object technology. We do that on a shared basis.

CW: Do IS people have difficulties with split allegiances? Is there tension between the business and technical people?
CRAWFORD: When we do new application development, development teams consist of people from [IS] and people from the business.

On top of that, I jointly evaluate the performance of each of these areas in concert with the senior vice president or whoever is head of that particular business area. [We] will sit down and regularly discuss the expectations of my people who support him. Then when it comes time for formal evaluation, I will take considerable input from him in terms of performance. If we have an issue which breeds tension, we're dealing with it because we really share in the performance expectations. It doesn't get out of hand.

CW: Where does the buck stop under a team approach? If something crashes or a particular technology doesn't pay off, who's accountable?
CRAWFORD: As a practical matter, the whole emphasis is to make the team accountable. In order to make [teams] accountable, you have to equip them with the ability to remove their own impediments. If they need more people, if they need more training, if they're not getting a clear definition of the scope of work, if they miss an estimate, then as a team, they're expected to fix that.

A real simple example is [hiring]. In the past, if you needed to hire a new employee and you've got the authority to do it, you normally went and interviewed and maybe you'd have your peer manager share in the interview and you would decide on the person for the job. In this structure, the team does that interviewing. What you're trying to make them do is operate at an equal level in terms of accountability for the success of the mission.

STELLA JOHNSON

In 1987, Hartford Insurance cut its IS department by 25%, eliminating 500 jobs in one fell swoop. In reaction, IS Vice President Jack Crawford implemented a new team partnership between IS and users. The effort has worked so well that very little about the IS mission has been changed.

Where we have teams in place, we normally break out the performance appraisal into the team performance where your result is only as good as the team does, then adjust that based on how [an individual] contributed to the team effort.

CW: How has the team-based approach changed your job as chief information officer?
CRAWFORD: I spend an awful lot of my time communicating things I want shared from one organization to another because I'm in the unique position of being part of every automation effort that's linked to every business driver we ever identified.

Another big part of my time is trying to build consensus around the technology. [I'm] not in a position where [I] can sit and be a dictator of direction. It runs counter to building consensus in a team environment.

The bottom line is that the job becomes very nebulous at times. You have to be comfortable operating in an environment of shared responsibility, shared control and shared accountability.

CW: Do teams make justifying technology investment any easier? Any more difficult?
CRAWFORD: I haven't seen any effect on that. I mean the justification strategy is a linkage of the technology investment to the business strategy. Whether it's a more traditional management structure or a team structure, you have to do that. To the extent that we all work on this together, the product is owned by myself and all our department heads and all our directors. My management team and I agree on the priorities on infrastructure investments. When I deal with my peers, they're also being sold on the investment by the department heads and the division directors who report to me. The whole idea is that we're achieving consensus and we're united in what the priorities are for these investments.

CW: You've had seven years of evolving this team approach to better align IS and the business. What work has yet to be done?
CRAWFORD: The biggest thing we face now is the continued reskilling of people. I don't see any big changes in the way we operate, but I see the pressure now on the value-added and the innovation that has to come if we're going to take advantage of new technologies.

For example, there's a lot of hype about the information highway, but the fact of the matter is that insurance products, probably in the second half of this decade, will become more and more distributed over electronic means. Given that, how do IS professionals who haven't had the skills dealing with, say, cable television, acquire the skills to do that? Even if you partner or joint venture with someone, you still need your inside skills to know how to manage that and what the opportunities are. So it's the management skilling around those new technologies and the technical reskilling. I mean, object technology offers enormous promise — all the benefits of application development and maintenance, but it's a major investment. So I feel that is our No. 1 challenge for as far in the future as I can see because I see the new technologies coming out faster and faster.

CW: What's your advice to other IS executives looking to implement a team approach?
CRAWFORD: I think companies thinking about doing this or the ones that are looking to realign need to be realistic. I don't believe this can happen successfully with revolution. It really takes an evolving process and reinforcement. If there's a way to get there quickly, I don't know how to do that. In fact, I don't believe it can happen. So if somebody's in a situation where you've got a major disjoint between the business community and the [IS] organization, I don't think going to teams is a quick-fix approach that will work. ■

King is *Computerworld*'s senior editor, mid-Atlantic bureau.

The ITT Hartford Information Management Mission Statement

Our mission

Our mission is to support the business goals and objectives of The Hartford by doing the following:

- Maintaining production performance at a level that reflects a "service excellence" philosophy.
- Seeking out and implementing solutions that effectively satisfy business requirements and creatively exploit business opportunities.

Our goals

- To establish customer service as the distinguishing characteristic of information management.
- To establish information management as a leading contributor to ongoing corporate expense control and reduction efforts.
- To enable The Hartford to improve its competitive position through automation that is tailored to the specific needs of each market segment and business group and adaptable to changing business requirements and technological opportunities.

Our vision

Our highest priority is to satisfy our customer's needs and expectations through responsive, courteous, high-quality service delivered at the lowest possible cost.

Our aim is to promote a dynamic, energetic and productive working environment in which achievement is recognized, creativity is encouraged and teamwork is fostered through relationships based upon trust and respect.

Our management team

Our leadership approach strives to do the following:

- Support our people.
- Create and maintain an atmosphere of trust and teamwork that enables people to take risks, to innovate and to learn from mistakes.
- Provide communication that is open, honest and effective.
- Encourage people to share their ideas and participate in the decision-making process at all levels.
- Provide honest assessments of performance and encourage people to develop to their maximum potential.
- Express appreciation and provide recognition for a job well done.
- Provide an example of professionalism and dedication by making clear commitments, taking them seriously and expecting others to do the same.

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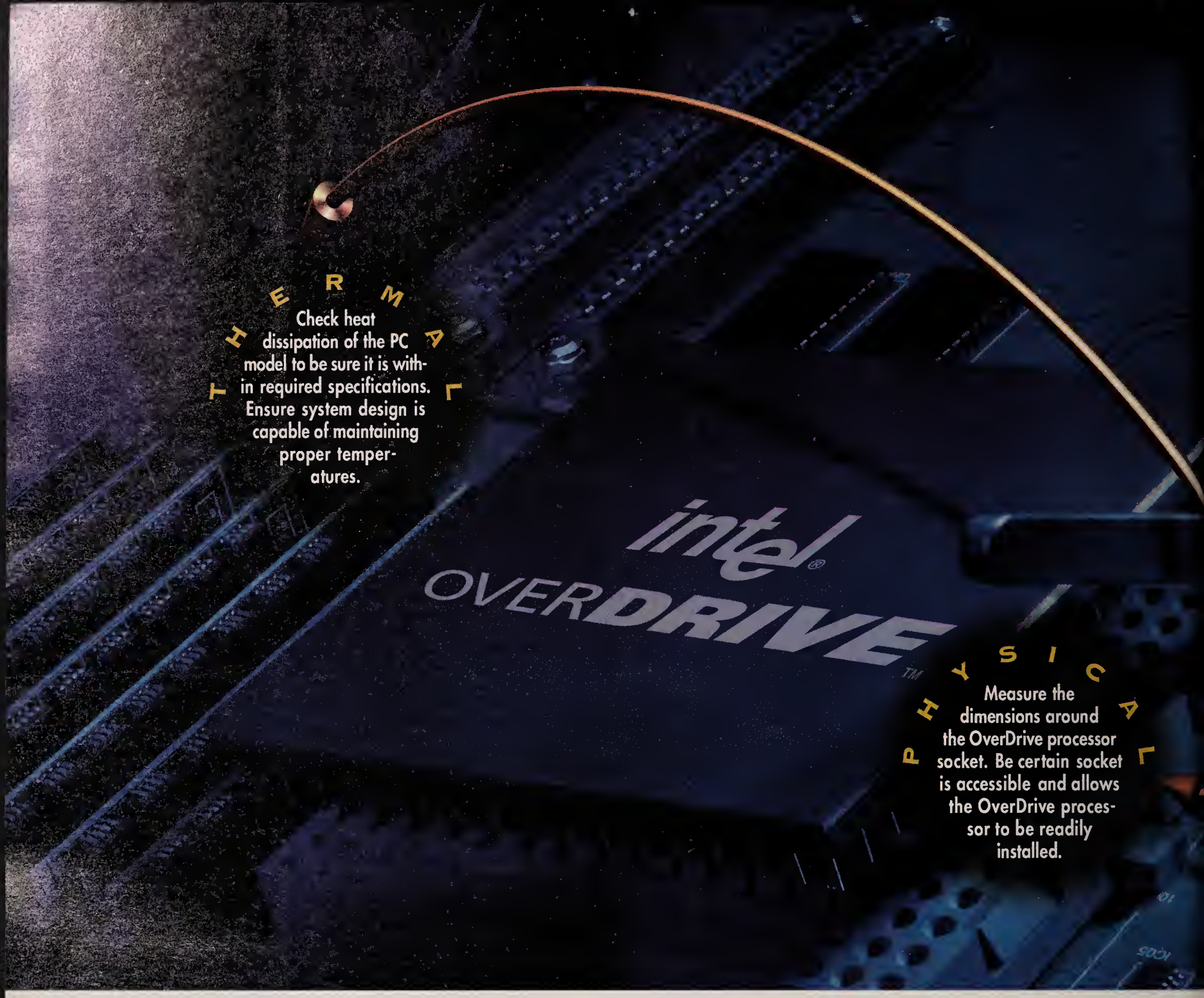

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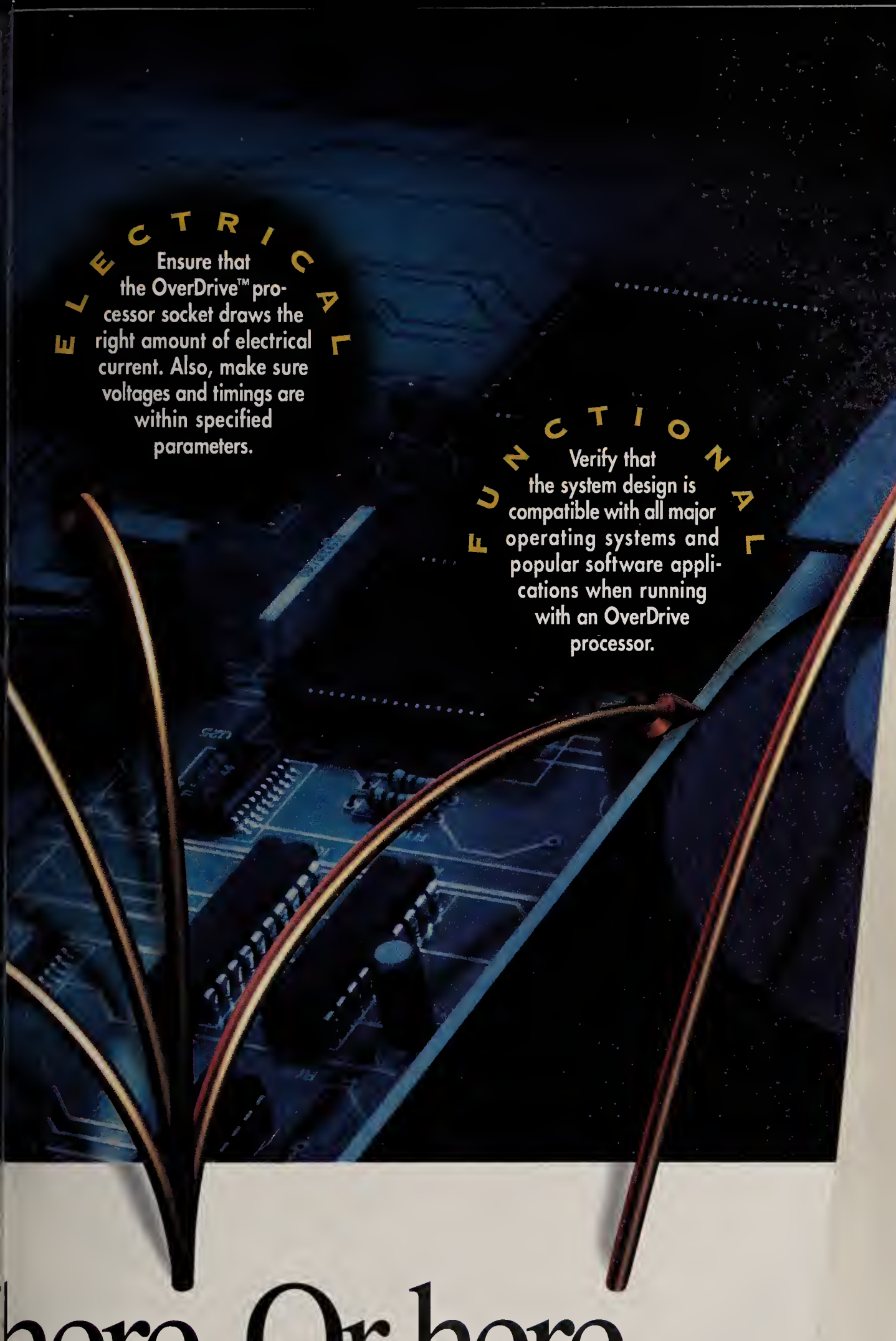

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YOU CAN'T DO IT ALL

The Society for Information Management's annual conference confirms that IS executives these days are delegating more day-to-day operations in order to concentrate on strategic issues

BY JULIA KING

ROBERT NEUBECKER

Information systems groups can't do it all. So increasingly they're turning over day-to-day development and maintenanee operations to outsiders. Moreover, IS exeeutives are delegating day-to-day network and platform operations so they can concentrate on higher-level strategic issucs.

All of this isn't new to the Kodaks and Xeroxes of the world. They've been outsoureing these and many other IS and non-IS functions for several years.

What is new, however, is the growing consensus in wider IS eirеles that outsourcing isn't just for eorporate titans. Inercasingly, IS organizations are beginning to farm out at least part of their day-to-day operations.

Their main foeuses now are on business strategies, setting enterprisewide standards, managing partnerships with users and vendors and building and managing state-of-the-art information infrastructures.

And if they aren't focused on these areas, they should be. That was the pieture painted at the Society for Information Management's (SIM) annual conferenee, held last month outside Salt Lake City.

"More and more, IS organizations are moving [away] from doing things themselves to ensuring that the right things get done," says John F. Rockart, director of the Center for Information Systems Research (CISR) at MIT. Rockart, formerly a voeal opponent of IS outsoureing, eited a study based on interviews with top IS exeeutives at 50 Fortune 500 eompanies. CISR's study, conducted during the past year, was funded by SIM.

"More and more, IS organizations are moving [away] from doing things themselves to ensuring that the right things get done."
— John F. Rockart, director of the Center for Information Systems Research at MIT in Cambridge, Mass.

"About two years ago, I didn't see any real reason for outsoureing," Roekart says. "I thought good managers should be able to manage everything. But now things are different. Senior management has finally decided that information is important, and a lot of internal IS time is working with line organizations to find out what they need to get information to management."

The Chureh of Jesus Christ of Latter-Day Saints "used to have positively no outsourcing," says Jeff Bateson, director of translation administration services at the church. Now, much of his department's programming is done by outsiders with "IS playing more of a consultant role," he says.

Two separate trends

At Unocal Corp., the $10 billion petroleum giant, IS follows both trends identified in the CISR study — outsourcing day-to-day development and concentrating on alignment with business goals. IS was restruetured in July, and routine tasks sueh as network operations and management are seheduled to be outsoureed, according to Paul Jones, general manager of information serviees at the Los Angeles company.

This will allow IS to work more like a eonsulting group, concentrating on projeets sueh as writing speeifications and solieiting proposals for the imaging system reeently implemented in the eompany's pipeline division.

As more IS functions are outsoureed, aligning information teehnology with business goals is the main IS priority, exeeutives say.

"ClOs have to let go of stuff that doesn't add value and get their minds on issues like the business impact of a National Information Infrastrueture [NII]," says Ray Hoving, director of MIS/Process Systems Group at Air Products and Chemicals, Ine. in Allentown, Pa. "ClOs asleep at the switch will get run over."

Specifically, Hoving says he is eoncerned that the interests of business users have been inadequately represented and heard over the eourse of the NII debate. Hoving is the chairman of SIM's National Information Highway Advisory Council. Compared with the large numbers of telecommunications vendors, service providers and politicians who are lobbying, "we [business users] are just a speck on the wall in Washington," he notes.

Hoving says he also believes that virtually all companies will eventually use the NII. "So, ClOs must look beyond SNA networks and the interoperability of minicomputers and understand the business impact of the NII," he says.

Also of concern

Other speakers at the SIM eonferenee said IS must also focus on internal infrastructure and standards issues.

John Halloran, prineipal at Nolan, Norton & Co., says IS' No. 1 job today is building and managing a technieal infrastrueture. A critieal part of doing that is setting and stieking to standards, he says.

"Sinee software is cheap to buy and eonfigurations of machines ean be easily ehanged, you have almost a customized environment for eaeh user unless there are fairly aggressive and vigorous standards," Halloran says. "If you haven't done that, you have an unmanaged environment."

Speeifieally, Halloran reeommends that IS groups set up researeh and development facilities to test-drive hardware and software against standards and then make reeommendations to end users.

Jeanne Ross, a CISR researcher, also emphasizes the importanee of standards. But standards can be difficult to establish in the face of today's rapidly changing technologies, she says.

"But it's better to have a standard and change it rather than have no standard at all," she insists.

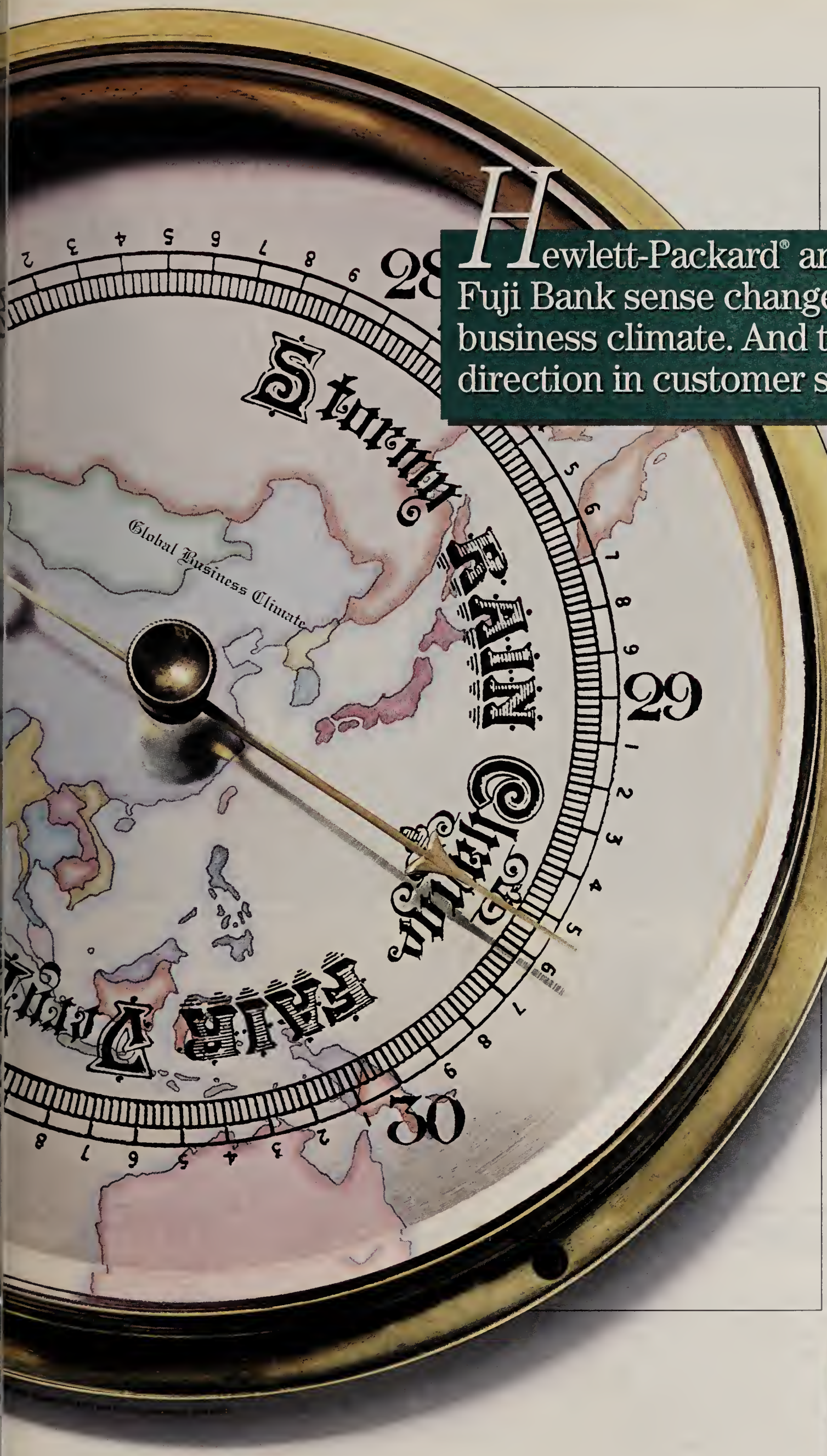
Exactly how IS should be organized and governed to work through its ehanging agenda remains open for debate.

For example, author Margaret J. Wheatley says businesses should experiment with radically new organizational forms. On the other hand, Naomi Seligman, a senior partner at the Researeh Board, argues for centralized IS control because systems themselves will increasingly beeome more centralized and because "all data is eorporate data."

"In the arehitecture of the 1990s, the investment will be at the server level. Applications and data will eome off PCs, and the distinetion between loeal-area networks and wide-area networks will disappear," Seligman predicts.

Denny Steele, vice president of

SIM, *page 102*



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CONTINUED FROM PAGE 100

corporate information resources at Bergen Brunswig Corp., says he put application development back under central IS control after a period in which the function was dispersed among user organizations. Steele says the move was necessary for the Orange, Calif.-based pharmaceutical distributor to retain control for building cross-functional systems.

What's on tap

Other events occurred at the conference:

• **SIM awarded its Partners in Leadership Award** to Harold Cramer, Graduate Health System's (GHS) chief executive officer; Phillip Katz, GHS' vice president of planning and technology; Daniel Tellep, Lockheed Corp.'s CEO; and Dean O. Allen, vice president of IS at Lockheed. The annual award honors senior IS and business executives who achieve significant gains from integrating technology and business strategies.

GHS, a Philadelphia company that operates seven hospitals, has saved more than $1 million with an electronic medical record system and an on-line ordering and inventory system. Lockheed, among other things, consolidated 17 data centers into a central site in Denver and has initiated new collaborative systems for buying hardware and software. The company has so far saved $90 million on a project originally expected to cost $200 million.

• **SIM established two new working groups.** Janet Caldow, a senior consultant at IBM in Washington, will chair the "IS business culture" group. The other group will focus on information technology procurement issues and will be chaired by Claude Marais, director of processing services and planning at Philadelphia-based Elf Atochem North America.

• In a bid to increase membership and target services to specific audiences, **SIM is revamping its membership structure** to include five levels of participation. These range from individual memberships to the group's new Enterprise Plus program under which as many as seven representatives from a member company can participate in SIM programs.

• **Re-engineering guru James Champy** apparently isn't content with just redesigning business processes. His new target is management. In a brief preview of his new book *Re-engineering Management*, Champy says CIOs and other managers must develop a mind "perpetually prepared to revolt against its own conclusions."

Business process re-engineering, teams and user project management are what's hot at top IS organizations today, according to the MIT research.

• IS executives about to acquire software can check out SIM's recently released **software licensing white paper.** Intended as a guide for negotiations between software customers and vendors, the 20-page document defines basic licensing models and addresses issues such as software asset management.

• **The Aspen Institute is teaming up with SIM** to offer a new conference for senior information executives with broad leadership responsibilities.

The Forum for Information Executives will be a five-day retreat where CIOs will hold Socratic-style discussions on business dilemmas, personal values and the social impact of business trends. The first forum is scheduled for March 24-28 in Queenstown, Md. For more information, call SIM headquarters at (312) 644-6610.

• SIM will sponsor a **nationwide videoconference on the NII** on Thursday, Nov. 17, from 12:30 to 4 p.m. EST. The live videocast will originate from the Boston and Pacific Northwest chapters and will connect participants to many local SIM chapters nationwide. At least 11 chapters will participate. Amonth the invited speakers are Vice President Al Gore and Microsoft CEO Bill Gates.

• SIM is one of four organizations offering **a new bimonthly videoactive subscription series** that examines the practical applications and financial impact of information technology. The other sponsors are Gartner Group, Inc., the Center for Video Education and the Financial Executive Institute.

The video series features hour-long segments on various topics such as how to change IS infrastructures, how technology developments affect the enterprise and better ways to budget, forecast and finance IS decisions. The annual subscription price is $1,995.

For more information, call (800) 621-0043 or send electronic mail to: ctrvideoed@aol.com.

King is a *Computerworld* senior editor, management.

Executive Track

The Home Depot, Inc. in Atlanta has announced the appointment of **Ron Griffin** to vice president of information services. He will report to Chairman Bernard Marcus and Chief Financial Officer Ron Brill. Griffin was previously vice president of applications development at the company. Griffin's appointment follows the promotion of Andy McKenna from vice president of information systems to president of the company's Midwest division.

Elder-Beerman Stores Corp. in Dayton, Ohio, has announced the appointment of **Eric Goldfarb** as vice president of business application development. He will be responsible for helping the company achieve strategic business objectives through information technology. Prior to joining Elder-Beerman, Goldfarb held executive IS positions at Limited, Inc., Lintas and Domino's Pizza, Inc.

Barnes & Noble, Inc. in New York has announced the appointments of **Scott E. Lipsky** as chief information officer and **N. Nicolle Ball** as vice president of IS. Lipsky will be responsible for all data processing systems and operations throughout the corporation. Ball will be responsible for Barnes & Noble's mainframe data center. Prior to his appointment, Lipsky was president of Omni Information Group, Inc. in Dallas. Before that, he was vice president of MIS at Babbage's, Inc. in Dallas. Prior to her appointment, Ball worked at B. Dalton Bookseller and Barnes & Noble in several positions, including director of strategic store systems.

EDS Management Consulting Services in New York has announced the appointment of **Jack Barry** to direct the organization's new Resource Management Practice in Cambridge, Mass. Barry will lead the practice in helping clients improve operational performance, reduce costs and cycle times and improve customer service. Prior to his appointment, Barry worked at Arthur D. Little for several years, heading the logistics, supply chain and economic development practice.

The National Retail Federation has announced that **Thomas S. Rittenhouse**, vice president and controller of Strawbridge and Clothier, a Philadelphia department store chain, will receive a Silver Plaque Award at the federation's 84th annual convention in New York in January. The award recognizes Rittenhouse's leadership and planning for the federation and its Retail Information Systems Conference.

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Pat Walker,
Traffic Manager

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Intelligence Files

Killer technology

Call it the ultimate IS competitive advantage — the ability to wage high-tech war with microprocessors and software that prevent your enemy from being able to even launch or command its weapons.

That is the latest military endeavor of the U.S. Navy, which has developed a new Information Warfare Activity operation. The Navy will open a center to train the needed information warriors this January. The Information Warfare Activity has set up temporary operations in Fort Meade, Md. The center is expected to be built in Norfolk, Va., and is being developed by The Naval Security Group, the same group that cracked Japanese codes during World War II.

The center's focus will be on developing new technology that enables computers, modems and communication satellites to be used as weapons, not just as machines that control or guide other weapons. The goal is to develop the ability to destroy or disable enemy systems via computer link, thus preventing the enemy from being able to fire missiles, launch airplanes or direct troop movements.

Vice Adm. Arthur K. Cebrowski, director of space and electronic warfare for the Navy, says the new center will have two objectives: to provide commanders with complete and immediate data on enemy strength and positions and how battlefield conditions would affect various battle scenarios and to develop technologies to destroy, deceive or disable enemy information systems.

The Navy is not alone in its efforts. Last year, the Air Force decided to restructure its information warfare activities, and the Army is expected to announce its information warfare organization this fall.

Source: *San Jose Mercury News*

Consumers not biting

Despite all the hype over multimedia marketing opportunities on the information superhighway, "killer applications" such as video on demand, home shopping or interactive games are not what consumers are thirsting for, according to a recent *Macworld* magazine study.

In a national survey of 600 adult consumers, *Macworld* found that the public is interested in using emerging networks for such basic functions as voting in elections, contacting their representatives, getting local school information and obtaining tax and credit data. They are much less interested in multimedia opportunities such as movies and TV programs on demand, obtaining event and marketing data, sports statistics on demand or gambling and dating services.

The survey findings run contrary to marketing arguments being used to justify construction of the information superhighway. The telecommunications industry is banking on killer applications such as home shopping and video on demand to provide the additional revenue needed to underwrite the mammoth highway project and is pumping billions of dollars into developing interactive entertainment and shopping services.

Macworld sponsored the poll during an eight-month investigation of consumer interests on the information superhighway. The special report appears in this month's issue. "Our findings suggest that commercial applications for the information superhighway are quickly diverging from the public's needs and interests," says Adrian Mello, editor-in-chief.

Source: IDG News Service

Roaming the 3-D IS halls

In the try-before-you-buy category, *BusinessWeek* reports that two Purdue University professors have built a system that lets managers "roam through three-dimensional models of their organizations." The so-called virtual reality software, which is being tailored for commercial use, enables executives to conduct electronic walk-throughs to assess staffing and equipment needs as well as simulate proposed operational changes and their effects.

Calendar

OCT. 16-22

Open Forum on Business Process Re-engineering. Dallas, Oct. 17 — Cost: $350. Contact: Karen K. Wilson, Texas Instruments, Inc., Dallas, Texas (214) 575-6235.

11th Annual Baltimore Office & Computer Show. Baltimore, Oct. 17-18 — Contact: Stephanie Sutor, Industrial Shows of America, Inc., Timonium, Md. (410) 771-9139.

12th Annual Pacific Northwest Software Quality Conference. Portland, Ore., Oct. 17-19 — Contact: Terri Moore, Pacific Agenda, Portland, Ore. (503) 223-8633.

Open Computing & Server Conference. Phoenix, Oct. 17-19 — The conference will outline a client/server perspective to the planning, implementation and management of the information infrastructure. Contact: Meta Group, Inc., Westport, Conn. (203) 226-6382.

Tech Decisions '94. San Jose, Calif., Oct. 17-19 — The reseller's technology and business exposition. Cost: $199. Contact: CMP Publications, Inc., Jericho, N.Y. (516) 733-6770.

Unbundling the Local Exchange Network. Washington, Oct. 18-19 — Contact: Telestrategies, McLean, Va. (703) 734-7050.

Advanced Manufacturing Research's 8th Annual Conference: Reenergizing the Enterprise: Winning Strategies for Manufacturers. Boston, Oct. 19-20 — Contact: Advanced Manufacturing Research, Boston, Mass. (617) 542-6600.

Ninth Annual PC Expo. Chicago, Oct. 19-21 — Keynote speaker: Mitchell Kertzman, founder, chairman and chief executive officer of Powersoft Corp. Contact: Bruno Blenheim, Inc., Fort Lee, N.J. (800) 829-3976.

Independent Computer Consultants Association — Investing in our Future. Costa Mesa, Calif., Oct. 19-22 — Contact: Independent Computer Consultants Association, St. Louis, Mo. (800) 774-4222.

Theft of High-Valued Electronic Components: Issues and Answers for High-Tech Firms. Sunnyvale, Calif., Oct. 20 — Speakers include law enforcement and FBI officials, white-collar crime experts, loss prevention professionals and professionals who have been the targets of such crimes. Contact: American Electronic Association, Santa Clara, Calif. (408) 987-4200.

DEXCON 1994. San Francisco, Oct. 20-21 — Keynote address: "Vision of IS Management Trends for the 1990s and Beyond" by DuWayne Peterson, president of DuWayne Peterson Associates. Contact: Miller Freeman, Inc., San Francisco, Calif. (415) 905-2267.

The Liberation Management Workshop: Creating Customer-Driven Teams. Redwood Shores, Calif., Oct. 20-21 — Fee: $50. Contact: TPG/Learning Systems, Palo Alto, Calif. (415) 326-5774.

Negotiating Software License Agreements: Issues, Positions, Strategies and Tactics. San Francisco, Oct. 20-21 — The seminar will focus on the skills necessary to negotiate more balanced contracts in the areas of licensee rights, licenser responsibilities and the risks taken by both parties in major software license agreements. Contact: Data-Tech Institute, Clifton, N.J. (201) 478-5400.

The 1994 Conference on Computer Supported Cooperative. Chapel Hill, N.C., Oct. 22-26 — Contact: Computer Supported Cooperative '94 Office, Computer Science Department, Chapel Hill, N.C. (919) 962-1869.

OCT. 23-29

1994 Annual Conference. Boca Raton, Fla., Oct. 23-26 — Keynote address: "U.S. Foreign Policy and Global Affairs" by U.S. Secretary of State Lawrence S. Eagleburger. Contact: The Association for Suppliers of Printing and Publishing Technologies, Reston, Va. (703) 265-7200.

ICSA 14th Annual Conference: Customer Service — Your Golden Gate to Success. San Francisco, Oct. 23-26 — Contact: International Customer Service Association, Chicago, Ill. (312) 321-6800.

IT Economics: Business Value & Profit Maximization. Tucson, Ariz., Oct. 23-26 — The conference will explore business value and profit maximization. Participants will look at a variety of industries to understand why and how these organizations are repositioning their outlooks to better measure the contribution and value of information technology and its impact on the enterprise. Keynote speaker Peter F. Drucker will speak on "The Future of the Corporation." Fees: IS practitioners/executives, $1,395; government/military personnel, $1,695; sales/marketing/consulting professionals, $5,000. Contact: CIO Publishing, Inc., Framingham, Mass. (508) 872-8200.

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By entering *Computerworld*'s 3rd Annual Re-engineering Team of the Year Awards Competition.

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For complete entry details call (800) 343-6474, Ext. 460 OR Fax us your request at (508) 875-8931

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Submissions may be made by end-user organizations and vendors, consulting firms and system integrators on behalf of their clients. Companies selected for consideration will be contacted by a *Computerworld* representative for further details and verification. The winner will be chosen by a panel of *Computerworld* editors. All entries are the property of *Computerworld*.

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UNDER CONSTRUCTION

Client/server systems management solutions have foundations in place, but is it safe to enter the building yet? Only a handful of products are close to passing inspection.

BY AVERY JENKINS

Systems management software for client/server and Unix systems does not yet meet the rigorous standards set by mainframe environments. In fact, only a few packages offer most of the required functions. These include management of: configuration and administration, data and storage, licenses, operations, performance, problem tracking, security and software distribution. (See page 108 for definitions and products.)

"The primary difference [between mainframe and client/server] is in the level of the product," says Beverly Loftus, technical services director at Florida Power and Light Co. in Miami. "The mainframe products are very mature and dependable. The distributed products still need some work."

Systems management, *page 108*

STUART SIEGEL

INSIDE

SYSTEMS MANAGEMENT DEFINED
The building blocks of systems management and a rundown on the top products can be found on *page 108.*

PRODUCT PROFILES
Compuware's EcoTools and Tivoli's Tivoli Management Environment are examined in detail. *Page 109.*

THE BUYERS SPEAK
Users of the most widely used systems management offerings from Computer Associates, Hewlett-Packard and IBM give their products generally low satisfaction ratings. *Page 112.*

HERMES
Firing Line evaluators say Microsoft's systems management product is easy to use for simple functions, but complex tasks require significant technical knowledge to implement. *Page 114*

SECURITY GAPS
Computerworld's Marketplace section features a report on client/server security management tools, detailing where they fall short for enterprise environments.

SYSTEMS MGT.

CONTINUED FROM 107

SYSTEMS MANAGEMENT PRODUCTS FOR CLIENT/SERVER AND UNIX ENVIRONMENTS FALL LARGELY INTO ONE OF THREE CATEGORIES: INTEGRATED, FRAMEWORK AND POINT PRODUCTS.

• Truly integrated systems management offerings attempt to provide all the management functions in a single package. Embedded integration services are included along with the vendor's own systems management applications.

• Framework vendors provide both their own management applications and a framework or open architecture that can be used by information systems organizations or independent software vendors to create an integrated systems management environment. They provide some solutions but strive to attract leading independent software vendor point solution providers.

• Point product vendor tools focus on distinct systems management applications. Many of these vendors are integrating their offerings into frameworks. They are also broadening their packages to include a wider range of systems management functions.

While many vendors claim they have integrated, across-the-board management, only one — Computer Associates International, Inc. with its CA-Unicenter — truly meets the definition of integrated systems management, according to Hurwitz Consulting Group, Inc. in Watertown, Mass.

Leading framework products include Tivoli Systems, Inc.'s Tivoli Management Environment, IBM's NetView/AIX and NetView/OS/2 and Hewlett-Packard Co.'s OpenView.

Sometimes the distinctions between products can blur. While Unicenter is packaged differently than Tivoli Management Environment, both products ultimately provide a wide array of systems management applications for client/server in a single environment. Compuware Corp.'s EcoTools appears to be an integrated package with its own framework. But Hurwitz Consulting categorizes it as a point product because it is primarily aimed at problem and performance management applications and does not invite independent software vendors to develop point solutions for its platform.

Which alternative makes the most sense? Take the practical route for now, advises Chet Geschickter, a vice president at Hurwitz Consulting. "The frameworks are really nice white-paper material," he says. "They are beautiful in their technical elegance, but for a production environment where bombs are exploding, focusing on available products for specific problems is a good approach."

INTEGRATED PACKAGES

Ed Wolf, MIS director at Brake Parts Industries in McHenry, Ill., opted for the single-vendor, single-package route. **WOLF PREFERS THE SINGLE-VENDOR SOLUTION BECAUSE IT SIMPLIFIES THE MANAGEMENT OF THE SYSTEMS MANAGEMENT TOOLS THEMSELVES.** For example, he says, when a new version comes out, he doesn't have to worry whether an upgrade will be compatible with other systems management components.

Wolf manages a mixed environ-

MANAGEMENT BUILDING BLOCKS

- **PROBLEM MANAGEMENT** Resolving malfunctions within the application or network.
- **SOFTWARE DISTRIBUTION** Remotely installing and configuring software on clients and servers.
- **LICENSE MANAGEMENT** Centrally tracking software licenses in a distributed setting.
- **CONFIGURATION AND ADMINISTRATION** Tracking and controlling computing resources by monitoring and managing user access and system requirements.
- **DATA AND STORAGE MANAGEMENT** Protecting critical data to optimize storage resources.
- **SECURITY MANAGEMENT** Protecting data and applications from unauthorized use.
- **PERFORMANCE MANAGEMENT** Tuning, monitoring and managing response time by using system metrics.
- **OPERATIONS MANAGEMENT** Coordinating the use of computing resources, including job scheduling, load balancing and print spool management.

WHAT IS SYSTEMS MANAGEMENT ANYWAY?

Systems management is the ability to monitor, troubleshoot, tune and generally manage all the components of client/server and heterogeneous environments

SYSTEMS MANAGEMENT APPLICATIONS	PROBLEM MANAGEMENT	SOFTWARE DISTRIBUTION MANAGEMENT	LICENSE MANAGEMENT	CONFIGURATION AND ADMINISTRATION MANAGEMENT	DATA AND STORAGE MANAGEMENT	SECURITY MANAGEMENT	PERFORMANCE MANAGEMENT	OPERATIONS MANAGEMENT
INTEGRATED SYSTEMS MANAGEMENT	This vendor provides comprehensive coverage of the majority of systems management applications in a single integrated package.							
Computer Associates International, Inc. Islandia, N.Y. (800) 225-5224	■			■	■	■*	■*	■
SYSTEMS MANAGEMENT FRAMEWORKS	These vendors provide frameworks for systems management applications to create an integrated management environment. They provide some applications and encourage third parties to add compatible applications as well.							
Hewlett-Packard Co. Palo Alto, Calif. (800) 752-0900	■	■		■	■		■	■
IBM Armonk, N.Y. (800) 426-3335	■	■		■	■	■	■	
Tivoli Systems, Inc. Austin, Texas (512) 794-9070	■	■	■	■	■	■	■	■
SYSTEMS MANAGEMENT POINT VENDORS	These vendors specialize in certain systems management applications.							
BMC Software, Inc. Sugar Land, Texas (800) 841-2031	■						■	
Boole & Babbage, Inc. San Jose, Calif. (800) 222-6653	■			■	■*			
Compuware Corp. Farmington Hills, Mich. (800) 535-8707	■			■		■*	■	
Epoch Systems, Inc. Westboro, Mass. (800) 873-7624					■			
Landmark Systems Corp. Vienna, Va. (800) 488-1111							■	
Legent Corp. Herndon, Va. (800) 676-5468	■	■			■		■	
OpenVision Technologies, Inc. Pleasanton, Calif. (800) 223-6730	■			■	■	■	■	■
Remedy Corp. Mountain View, Calif. (415) 903 5200	■						■	

Source: Client/server Systems Management: Technology Assessment and Directions, published by Hurwitz Consulting Group, Inc. (617) 926-5500

*Application is limited in its capabilities

ment consisting of HP 9000 servers at multiple manufacturing sites linked to central Digital Equipment Corp. and IBM mainframes via a wide-area network.

He is implementing Unicenter to manage event monitoring, backup and tape library control, as well as security.

UNIX ITSELF LACKS ANY CAPABILITY FOR CONSOLE MANAGEMENT. IT CANNOT EVEN RESPOND ADEQUATELY TO A DISK FILLED TO CAPACITY, WOLF SAYS.

Initially, "the systems group thought they could provide systems management functionality by writing scripts," he says. But scripts fell far short of Wolf's goal of mainframe-like management. Backups were lost, tapes were overwritten or lacked numbering — all of which made the homebrew approach less than desirable.

"Computer Associates hit the major areas of concern in a single product," he says. Unicenter currently monitors key system parameters and notifies personnel through console and pager messages when certain events occur, such as a disk nearing capacity.

THE MAIN DRAWBACK TO UNICENTER IS NOT IN THE PRODUCT BUT IN ITS PRICING, WOLF SAYS. "When you compare the price of the product to the platform, the price seems way out of line," he says.

FRAMEWORK KUDOS

One user's convenience is another's pet peeve. Bill Conner, corporate vice president at Motorola, Inc. in Arlington Heights, Ill., wanted to avoid the single-vendor approach. He chose Tivoli's management environment, a framework strategy that employs an open application programming interface. This encourages other developers to write compatible programs.

"I don't want to buy all my products from Tivoli because then I'm no better off than if I bought everything from CA or somebody else. **I WANT TO BE ABLE TO BUY THE BEST PRODUCT FROM THE BEST PEOPLE BUT HAVE THE PRODUCTS WORK TOGETHER," CONNER SAYS.** "Administration tools from some of the major hardware vendors tend to work best only on that vendor's hardware."

On the other hand, products from different vendors with no unifying threads like those in Tivoli's framework "put all the pressure on the system administrator's shoulders," Conner says.

But Conner believes Tivoli will attract a large enough number of software developers to make its framework concept supportable.

Tivoli "is doing a decent job of attracting other people into their environment," Geschickter says. But, he adds, "Tivoli is young, and scalability is a big issue," as it is for many of the new products.

POINTED ANSWERS

SOME USERS DON'T WANT TO INVEST IN A SINGLE VENDOR FOR ALL THEIR SYSTEMS MANAGEMENT NEEDS, AND THEY DON'T HAVE THE TIME TO PICK AND CHOOSE "BEST OF BREED" TOOLS. THE ANSWER: THEY GRAB WHAT WORKS.

Jon Ramaei, supervisor of database services at Duracell, Inc.'s research and development plant in Needham, Mass., needed a performance management and problem tracking tool that was light on resource usage. He selected Compuware's EcoTools to help overhaul the company's research database system from a Data General Corp. machine running Oracle 6 to a Sun Microsystems, Inc. SPARCserver 1000 running Oracle 7.

"Toward the end of the project, we were having a bear of a time keeping the system up," Ramaci says. So as part of the overhaul, he added EcoTools to the system. **"MOST OF THE OTHER PRODUCTS WE LOOKED AT WERE VERY RESOURCE-INTENSIVE ON THE DATABASE SERVER ITSELF," RAMACI SAYS. "ECOTOOLS IS NOT RESOURCE-INTENSIVE."**

While EcoTools provides a range of systems management functions, Ramaci uses it primarily for event notification. But that will change shortly as Duracell moves its financial and manufacturing applications in Connecticut over to Unix database servers.

Florida Power and Light is also in the midst of a migration with little time and few resources. Loftus is using Novadigm, Inc.'s Enterprise Desktop Manager (EDM) to control application deployment and distribution; IBM's ADSM to control backup and recovery functions; and parts of HP's OpenView for operations and performance.

Florida Power is in the middle of moving decision-support applications off the mainframe to a suite of 50 Unix servers serving 8,500 desktops. And Loftus is finding it a near-impossible task to manage the systems without increasing the staff size.

LIKE MANY OTHER USERS, SHE IS FORGOING THE FUTURISTIC GRAND SCHEME OF COMPREHENSIVE OR FRAMEWORK-STYLE OFFERINGS IN ORDER TO PLUG THE WORST GAPS IN HER DISTRIBUTED SYSTEMS MANAGEMENT SCHEME TODAY.

"EDM is helping us cope, but the problem is it's a very complex product," Loftus says. "It takes a lot of coding to make it do all the things we want it to do."

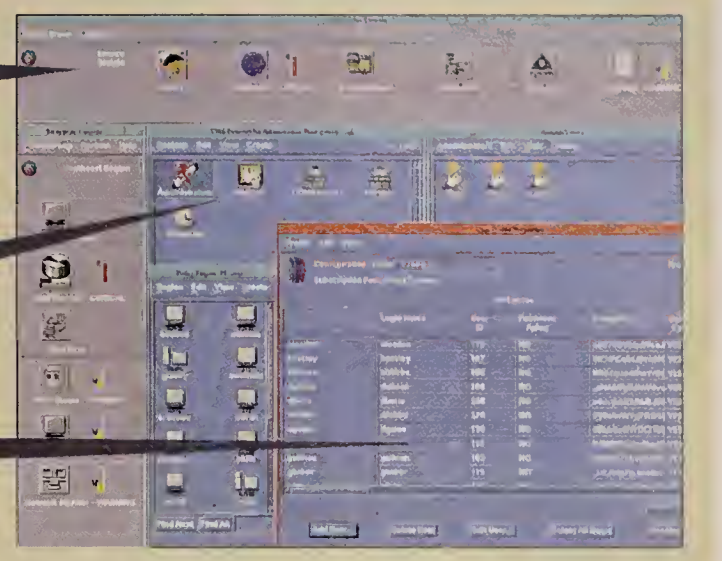
Use of the other products is similarly limited to less than their full scope simply because she lacks the human resources to set up the systems as completely as she would like, she says.

"It's really frustrating because there are so many requirements and so little time," Loftus says. ■

Jenkins is a free-lance writer in Ansonia, Conn.

THE FRAMEWORK

TIVOLI SYSTEMS, INC.'S TIVOLI MANAGEMENT ENVIRONMENT



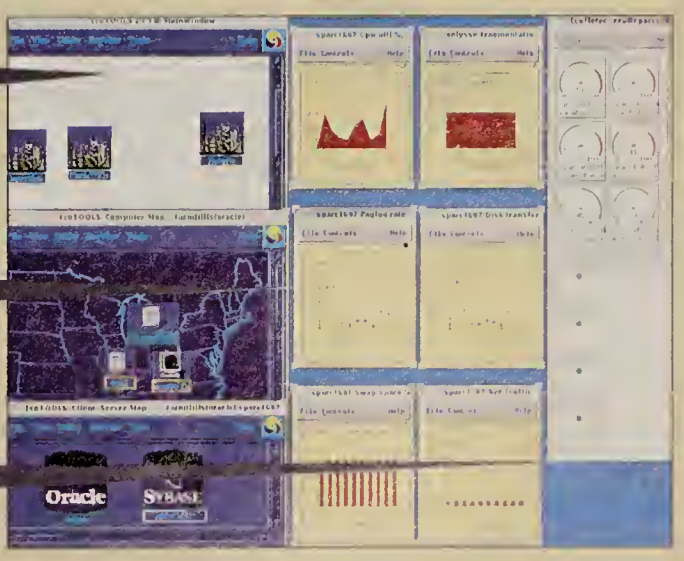
STRENGTHS AND WEAKNESSES

Tivoli's newness to the market makes users hard to find. Our Buyers' Satisfaction Scorecard survey collected 14 respondents. The chief strengths of the product, according to these users, were reliability, security and value. Weaknesses were ease of installation and cost.

TIVOLI MANAGEMENT ENVIRONMENT is an example of a framework approach to complete systems management. Tivoli provides modules for administration, printing, software distribution, operations, work load, backup and monitoring but leaves its platform open to third-party vendors for database administration, performance and security management. The company also provides application development tools to help other parties integrate applications within its core architecture, which uses an object request broker that conforms with the Object Management Group's CORBA 1.1.

THE POINT SOLUTION

COMPUWARE CORP.'S ECOTOOLS



STRENGTHS AND WEAKNESSES

EcoTools' small installed base of 75 yielded only 23 respondents for our Buyers' Satisfaction Scorecard. These users rated reliability, value and ease of use as the product's strengths and tagged ease of installation, cost and production control as weaknesses.

ECOTOOLS provides an integrated set of client/server systems management tools aimed at performance and problem management. Part of the EcoSystems product package, EcoTools uses a platform called EcoSphere, a framework that provides a generic set of core capabilities such as "Event-action" mechanisms for automating operations, a GUI, graphing and drawing tools and an object-oriented model. EcoTools integrates these capabilities with management functions for databases and Unix systems. The functions include: event, console and configuration management, automated operations, performance and security monitoring, capacity planning and management reporting.

WHAT TO ASK A SUPPLIER BEFORE YOU ASK THEM TO SUPPLY A CLIENT/SERVER SOLUTION

1. Will your approach to client/server
   - ☐ (A) require me to replace computers or networks I already have? OR
   - ☐ (B) protect my existing IS investment by interoperating with it?

A lot of time and money has been spent on existing systems and training. Don't throw them out if it's not necessary.

---

2. Do you
   - ☐ (A) offer client/server products as independent add-ons? OR
   - ☐ (B) offer the experience to integrate your products with my existing information environment?

No two enterprises are alike. A supplier needs broad experience integrating client/server solutions in all kinds of environments.

---

3. Do your products
   - ☐ (A) hinder access to the widest range of application software? OR
   - ☐ (B) support industry standards and the latest product releases from premier suppliers such as Novell, Oracle, Intel and Microsoft, as well as the developers who support them?

A commitment to standards and alliances with key vendors helps ensure a supplier will meet the broadest range of user requirements.

---

4. Are your client/server systems
   - ☐ (A) present-ready only? OR
   - ☐ (B) future-ready also?

Most enterprises are in business for the long run. Client/server solutions should be designed to support future generations of processor technology.

---

5. Are you
   - ☐ (A) a newcomer to transaction processing? OR
   - ☐ (B) a company with a heritage of industry-leading transaction processing solutions?

Any move to client/server involves your ability to process vital, business-critical transactions. A supplier should have extensive experience and technical expertise in OLTP.

---

6. Do you design products that
   - ☐ (A) *utilize* Intel486™ and Pentium™ processors, Windows NT,™ UNIX and other leading technologies? OR
   - ☐ (B) *OPTIMIZE* Intel486 and Pentium processors, Windows NT, UNIX and other leading technologies?

It's one thing to use the latest technology. It's another to get as much out of it as possible.

---

7. IF YOUR ANSWER TO ANY OF THE ABOVE QUESTIONS WAS (A)... WHY?
   IF YOUR ANSWER TO ANY OF THE ABOVE QUESTIONS WAS (B)... CAN YOU PROVE WHY?

If these questions are important to your enterprise, now is the time to call Unisys at 1-800-874-8647, ext. 199. Let us show you how our client/server solutions make the grade in performance, compatibility and investment protection.

Why buy someone's client/server vision if they can't see what you already have?

Put any vendor to the test. See if they build on your existing solutions—or just replace them.

If you've been examining client/server suppliers you may have noticed that many don't see the value of your current systems. Some want you to replace your products with theirs because that's all they're comfortable with. Some don't have the integration and open networking experience to make your different systems work together. And some just don't understand that client/server works best by improving on what you have and integrating it with what you need.

Things are different at Unisys. Our client/server solutions are designed from the start to work with the systems you're using today. And thanks to our long-term partnerships with companies like Intel, Microsoft, Oracle and Novell, you can be sure we'll keep you in the mainstream of client/server development and give you access to a wealth of hardworking applications.

Client/server involves the total enterprise: desktop systems, mid-range servers, enterprise servers and the networks that hold them together. At Unisys, we can deliver and integrate it all today.

intel inside

So use this short test to see how client/server suppliers measure up on some important issues. Then call Unisys at 1-800-874-8647, ext. 199, and learn more about a client/server vision that has its eyes wide open.

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BUYERS' SCORECARD: Client/server integrated packages face tough environment

Unix and client/server systems management software from IBM, Hewlett-Packard Co. and Computer Associates International, Inc. garnered generally low user satisfaction in our Buyers' Satisfaction Scorecard.

The low scores indicate the products may be victims of the difficult environment users are trying to master. The packages are not as robust as their mainframe counterparts, and conflicting platforms and multiple components are not making it any easier to implement them.

First Market Research Corp. collected 50 responses from users of each market-leading package. These vendors are striving to address users' systems management needs with the following two approaches:

- Copy the mainframe style of the product with a single integrated package aimed at most major systems management tasks. CA takes this approach with Unicenter.
- Offer a common platform or framework that allows users to integrate systems management modules as they see fit. IBM's NetView and HP's OpenView are examples of this approach, first tried for network management.

Among the established products, Unicenter is unique because it provides the most complete offering on the market. Its integrated modules are sold only as a single package.

Uniqueness has its drawbacks, however. Despite being fully integrated and offering a common graphical user interface regardless of platform, Unicenter scored low on ease of use.

Part of the reason can be attributed to complexity. "Because Unicenter is a full-functional package, its different components have a lot of interdependencies requiring users to be adept in more functions than they might need," says Chet Geschickter, vice president at Hurwitz Consulting Group, Inc. in Watertown, Mass.

OpenView's and NetView's frameworks restrict the complexity to only those point products in use. "OpenView and NetView users also tend to be a fairly technical group given the products' SNMP backgrounds. They need instrumentation and navigation but are less impressed by the graphical front end," Geschickter says.

Performance is also affected by the integrated vs. plug-in approach, and OpenView and NetView gain an advantage. Unicenter's all-in-one design has made performance one of its weak links because modules not in use still require system resources. OpenView's and NetView's task-specific approaches make performance one of their strongest features because of their lighter overhead and flexibility in balancing resources.

None of the three products are complete answers to systems management. While each wins points on a features checklist, each also shows gaps. OpenView and NetView can perform software distribution management; Unicenter cannot. Unicenter and NetView offer security management, which is not found in OpenView.

"HP's advantage is that functional gaps can be filled with third-party products. Unicenter's integrated approach keeps users locked to a CA solution," says Julie Rodwin, a senior analyst at Hurwitz Consulting.

None of the vendors scored well in multiplatform support, even though Unicenter is gradually being delivered for all the major Unix platforms. Currently, Unicenter runs on MVS and Unix. CA will add NetWare, AS/400, OS/2, Windows NT and additional Unix flavors in the coming months. The low rating may be attributed to initial user expectations that more platforms would be supported when Unicenter was introduced in May last year. NetView works with OS/2 and AIX. OpenView runs on HP/UX.

The uniqueness of each product makes cost less of an issue than functional capability. "There is not a lot of functional overlap between products in this early technology, so users tend not to be as worried about the price, although the product's value is very important," Geschickter says.

Unicenter's value rating may be misleading, reflecting those who bought the product before a recent price restructuring. CA "recently switched from its platform-based pricing to a user-based pricing scheme, a move that may change some users' views," Rodwin says. ■

Written by Kevin Burden, Computerworld senior researcher, CW Guide.

COMPUTERWORLD BUYERS' SATISFACTION SCORECARD

HOW THE MARKET LEADERS FARED

Response base: 50 users per product

Ratings are based on a 1-to-10 scale, where 10 is best. Total score is the average of ratings weighted by the categories' importance to the users. Listed in order of importance.

CATEGORIES	HEWLETT-PACKARD'S OPENVIEW	IBM'S NETVIEW/ OS/2; AIX	COMPUTER ASSOCIATES' CA-UNICENTER
OVERALL SCORE	6.0	5.8	5.7
SUPPORT	6.2	6.2	5.9
PERFORMANCE	7.4	7.1	6.8
EASE OF USE	5.9	5.4	5.7
MANAGEMENT MODULES	5.4	5.3	5.6
VALUE	5.6	5.4	5.1
MULTIPLATFORM SUPPORT	5.4	5.2	4.8

BOTH PROVIDE SNMP MANAGEMENT FOR FAULT, PERFORMANCE, AND CONFIGURATION.

INTEGRATED PRODUCT LEFT USERS FEELING THEY PAID FOR MORE THAN THEY NEEDED.

WHAT'S IMPORTANT IN A SYSTEMS MANAGEMENT PACKAGE

- Reliability
- Performance
- Vendor technical support
- Ease of use
- Ease of installation
- Security management
- Performance management
- Storage management
- Production control
- Value for the dollar
- Cost
- Multiplatform support

UNICENTER/STAR GIVEAWAY

Computer Associates announced two weeks ago it was offering its CA-Unicenter/Star system free of charge [CW, Oct. 3]. CA-Unicenter/Star is an OS/2-based application that allows the administration of multiple computing platforms from a single workstation. The package currently supports Hewlett-Packard's HP/UX, Sun's Solaris and IBM's AIX. Customers who complete CA's requirements will receive one free copy of the workstation package per trainee plus $5,000 worth of training. Ratings for this Buyers' Satisfaction Scorecard were completed prior to this announcement.

USERS WANTED

Computerworld's Database Division is conducting a Buyers' Satisfaction Scorecard on executive information and decision-support software. If you use such software, contact Alan Farias at (800) 343-6474, ext. 4574.

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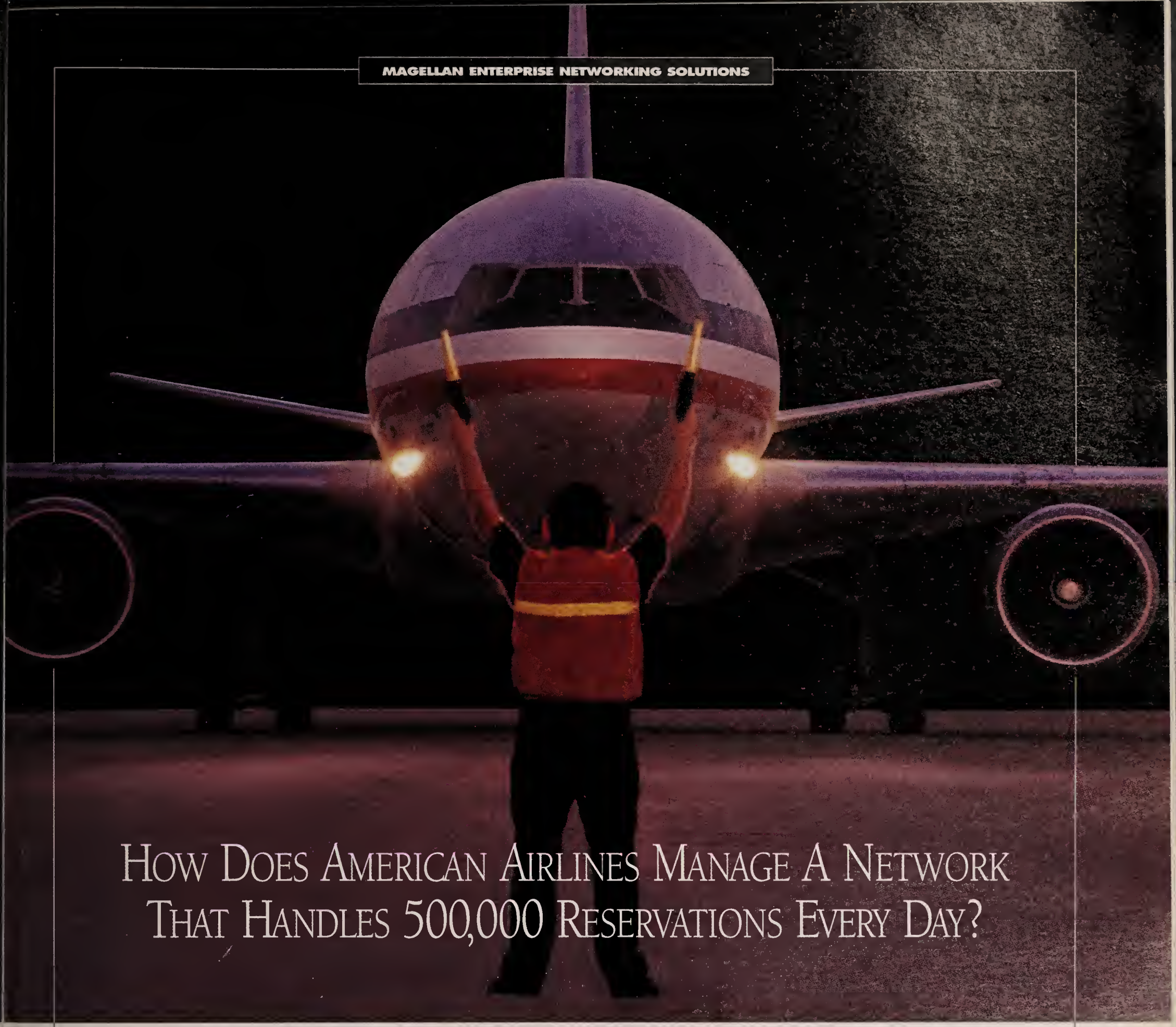

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FIRING LINE: Microsoft's Systems Management Server follows through on core functions, but users look for more automation

Need a central point of control for your enterprise network, hardware systems and applications? As long as your network consists of just PCs — running Windows, DOS, OS/2 or the Macintosh operating system — Microsoft's Systems Management Server (SMS) will work just fine. Throw Unix into the mix and you will be out looking for another tool.

A major stumbling block? Not necessarily, explains Darren Kammer, a systems analyst at Texas Instruments, Inc., which installed SMS for its PCs. TI has narrowed down its Unix management tool to three vendors. "All three vendors are saying they can already integrate with SMS. The vendors themselves are working on the development, which will end up being more standard than if we did it ourselves," Kammer says.

SMS, code-named Hermes, gives administrators a level of control over their distributed networks, allowing them to inventory hardware and software assets, do remote workstation troubleshooting and distribute software across the network. Users said it performs these core functions extremely well. However, further automation requires a lot of extra coding.

Evaluators included two manufacturing firms and two retail chains. The survey was developed with assistance from Howard Rubin and Associates and Technology Investment Strategies Corp.

Ease of use

Operating SMS' basic functions is not difficult, users said; however, some tasks, such as oversight of functions' performance, require a significant learning curve.

Retail chain 1: "Running the day-to-day activities is really very easy. But if you need real auditing to make sure the packages you created were distributed properly, writing those scripts takes some real technical knowledge."

Manufacturing firm 1: Administrators will need some training to learn how to build packages and distribute software, but the clients are pretty much self-explanatory."

Distributing software

Users said distributing applications across the network is easy when leaving the actual installation questions for the clients to answer. Automating the install so there is no user intervention or receiving a return message signaling job completion requires a lot of script writing.

Manufacturing firm 1: "Distributing programs using its native install is trivial. But it quickly becomes nontrivial when you need to write scripts to automate the procedure."

Performance

Resource utilization became a problem for evaluators when they distributed large files. The server creates multiple copies of the file during the job, which can eat up sizable chunks of memory.

Retail chain 1: "The time it takes to distribute a program is quite good. But when distributing, say, a 50M-byte file, the central site server may have 250M bytes in use while it's creating, compressing, distributing and uncompressing the multiple copies."

Asset/Configuration management

SMS effectively displays the names of all the devices on the network, but managing the client configuration is not an ability inherently built into the tool.

Manufacturing firm 2: "You need to do some script writing if you want to monitor or alter the client configuration."

Remote management

The remote diagnostics tool allows administrators to view all the pieces of a remote workstation that can create potential configuration and performance problems.

Manufacturing firm 2: "Remote management over a WAN is slower than a LAN, but the performance is still surprisingly good."

Reporting capabilities

SMS' reporting abilities are limited, but the product is open to third-party reporting tool connections.

Manufacturing firm 1: "Those looking for beautiful reports will be disappointed. The product provides the bare minimum ability to query databases in an easy-to-use format." ■

Written by Kevin Burden, Computerworld's senior researcher, CW Guide.

SYSTEMS MANAGEMENT SERVER

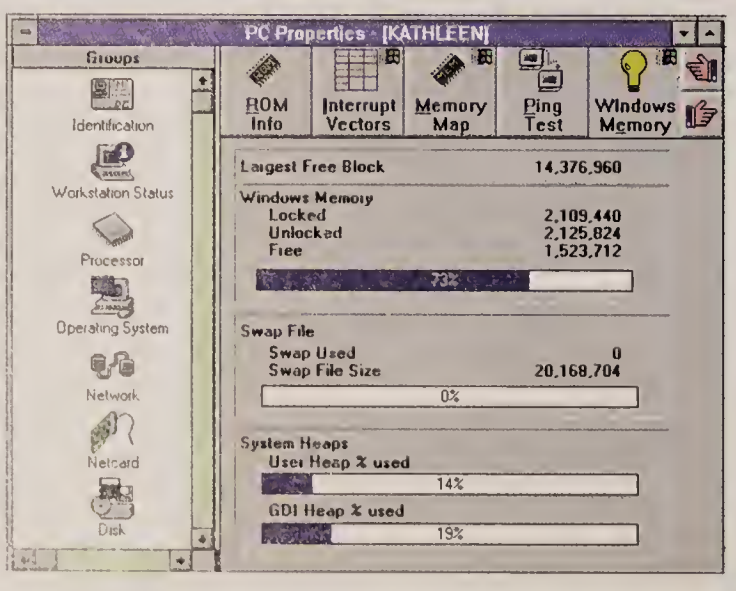
MICROSOFT CORP.
Redmond, Wash. (206) 882-8080
Ratings are based on user expectations on a 1-to-5 scale, where 1 is below expectations and 5 is above expectations.

3.3	TOTAL SCORE
3.3	DISTRIBUTING SOFTWARE
4.3	SUPPORT
3.8	ASSET/CONFIGURATION MANAGEMENT
3.0	VALUE
4.0	INTEGRATION WITH SERVER MANAGEMENT TOOLS
3.0	PROTOCOL SUPPORT
3.0	SECURITY MANAGEMENT
3.5	PERFORMANCE
2.5	EASE OF USE
2.5	EASE OF INSTALLATION
2.5	REPORTS
3.0	MULTIPLATFORM SUPPORT
4.3	REMOTE MANAGEMENT
3.3	PROTOCOL ANALYSIS

The basics are easy. Script writing for added functionality is not.

Difficult, requires extensive knowledge of your network.

Provides a complete view of a remote workstation configuration.



SMS' inventory capability allows administrators to drill into various assets on the network

MICROSOFT RESPONDS

Software distribution
SMS provides complete details on the status of software distribution jobs, including when a job was sent/received at each site and when each client ran the install job. It does not, however, indicate if the installed software is actually working.

Security
SMS currently controls access to management modules through the security features built into Windows NT Server and SQL Server. Future releases will provide even greater granularity to access functions.

Resource utilization
Early versions did not utilize server resources as we wanted. The final release allows administrators to adjust the compression of software packages to make better use of server resources.

Network cards
We are working with network card manufacturers to get more drivers to support promiscuous mode.

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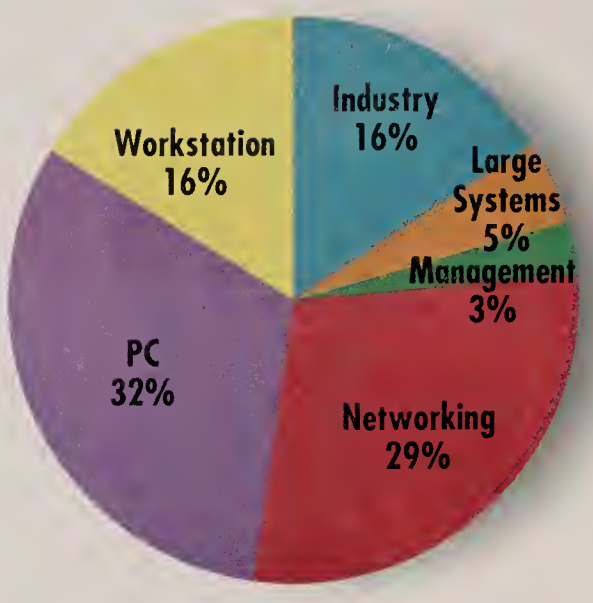
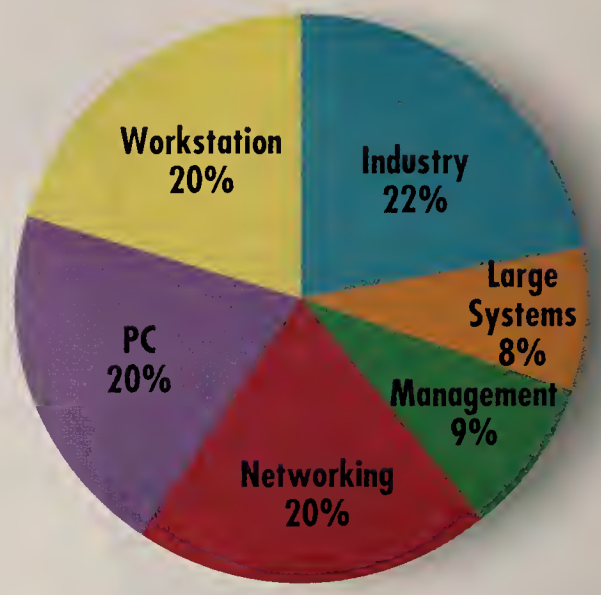


August 1, 1994
Editorial Profile



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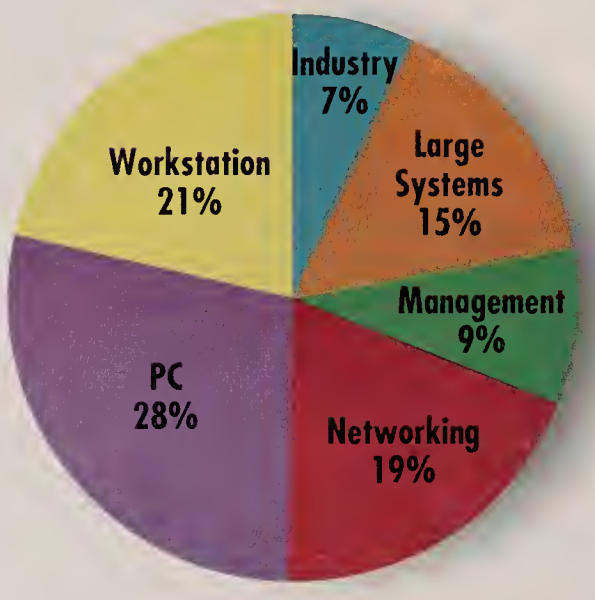

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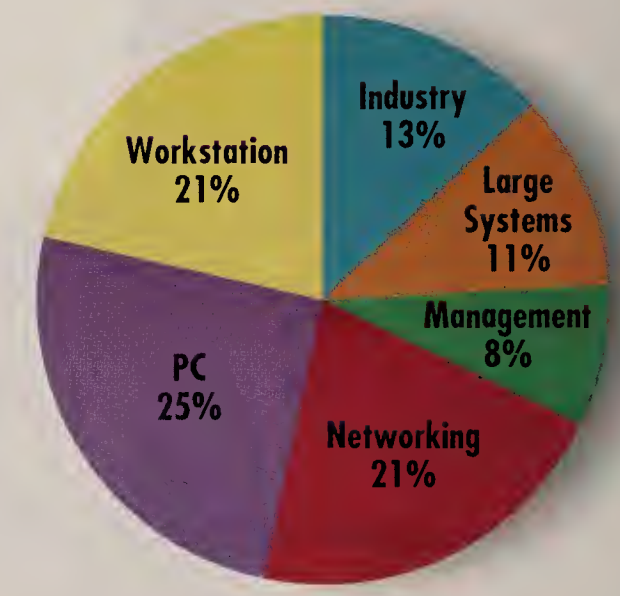

September 5, 1994
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EVERY WEEK WE

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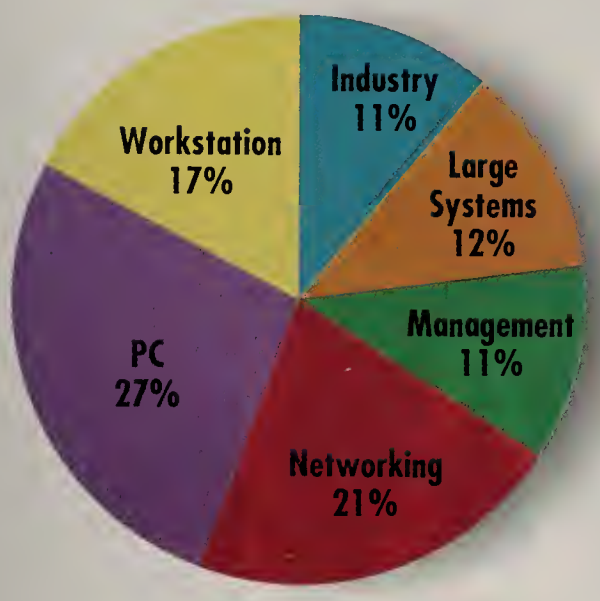

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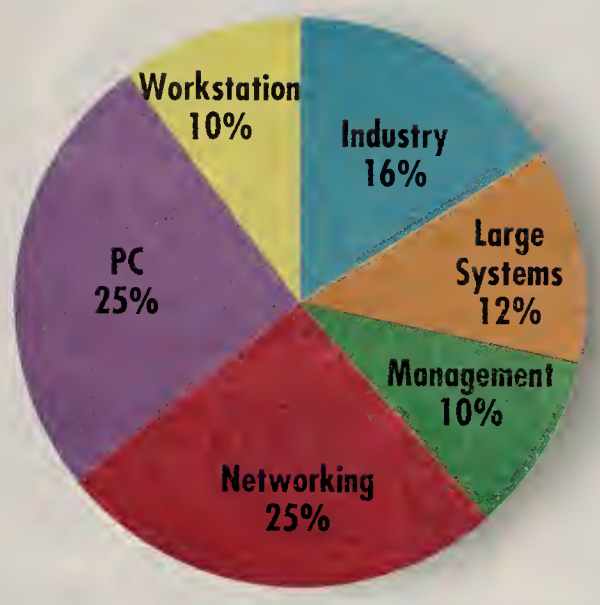

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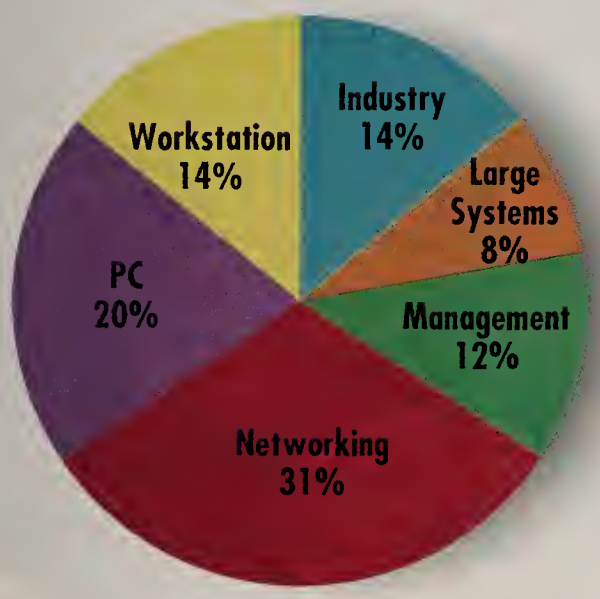

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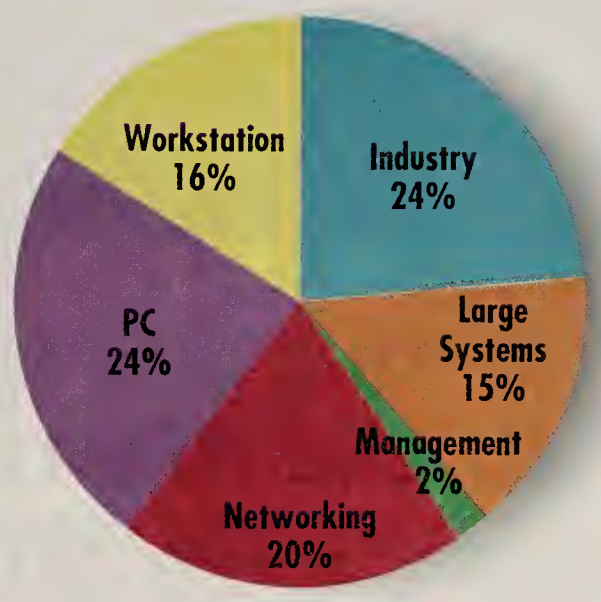

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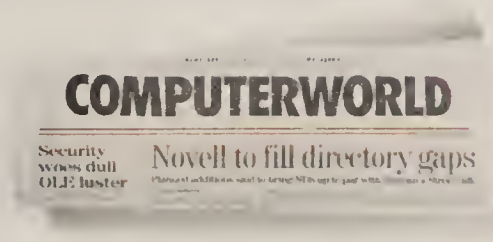

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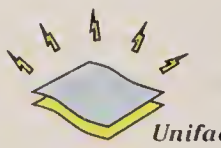

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It's rare when business managers can visualize all the ways in which information technology can transform the work process. But paired with IS professionals, the team can redesign the business process and develop the application – all at the same time. Here's how to get them to refine and crystallize their thinking.

CRYSTAL VISION

BY PATRICIA B. SEYBOLD

I just returned from a trip around the world. Organizations from the U.S. to Japan are struggling to be more competitive, streamline operations, increase the "knowledge work" and decrease the grunt work. Whether you call it re-engineering, business process redesign or whatever else is currently in vogue, this process of redesigning your business is not just an American fad. Everyone is doing it.

ILLUSTRATIONS BY TROY THOMAS

That said, the chances are slim that they are doing it right. The business process redesign (BPR) effort should be driven by the information systems group, but in 80% of the companies I've talked with, that's not the case. Instead, BPR teams are made up of employees from a variety of departments and are led by an external or internal consultant/facilitator. When they've completed their redesign efforts (which are usually documented on paper flowcharts), the teams hand off the resulting design to the IS

Vision, *page 120*

CONTINUED FROM PAGE 119

department to implement and automate the newly designed processes. No wonder this doesn't work.

What's wrong with this picture?

When you divorce IS from BPR efforts, you don't get the "clean slate" for which consultants often strive. Instead, you get a limited scope of vision. It's difficult for employees who aren't technologists to visualize all the ways in which IS could transform their jobs. They can extrapolate linearly. They can think of things they'd like to do with technology but can't do today. But because they don't understand how IS could completely transform the business, it's generally impossible for them to make the kinds of quantum leaps essential to a re-engineering effort.

When you delay integrating IS into your BPR activities, you deprive your teams of an extremely powerful technique for crystallizing and refining their thinking: rapid prototyping. Companies that have combined rapid prototyping with BPR report that employees find it easier to visualize the new roles and tasks they'll be taking on after they see them in action. They are also better able to articulate new business rules and eliminate unnecessary steps in most operations.

When you segregate IS from BPR, you also add weeks and months to the timetable for implementing the redesigned processes. Some companies take the clean slate approach of designing new processes in a vacuum and then worrying about implementation. As a result, they typically face a timetable of 18 months to two years to turn the new process into specifications and convert those specifications into applications. Companies that adopt an integrated, iterative spiral approach to BPR and rapid application development (RAD) are usually able to complete even very ambitious projects within nine months.

What's the 'right' way to combine BPR and IS?

There is no one right way to integrate information technology into your BPR or re-engineering projects. But there are some best practices that seem to be emerging from the pioneers who have been experimenting with the optimal combination (see story below).

It is not surprising that the most critical and tricky areas to get right have to do with stakeholder commitment and buy-in. A redesigned business process will not take root unless it was designed by the people who will use it. A redesigned business process is unlikely to be implemented if it takes more than two or three months for the BPR team to see and use the first cut of the new process.

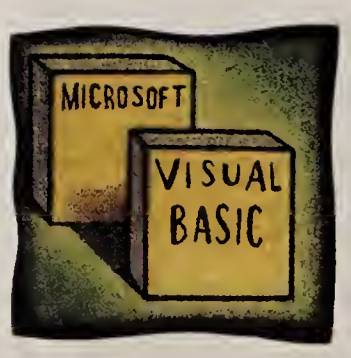
Best practices

Information technology doesn't lead the BPR effort; internal BPR consultants do. BPR efforts should be led by the business and facilitated by a trained BPR consultant. Most companies begin by using outside BPR consultancies and then gradually train their own internal consultants.

It's important to build this competency internally because BPR, like Total Quality Management, is not something you do once. It's an ongoing process. Another reason that it's important to "own" your own BPR competency is that, over time, you're going to want to codify each of your core business processes, maintain them and continuously refine them.

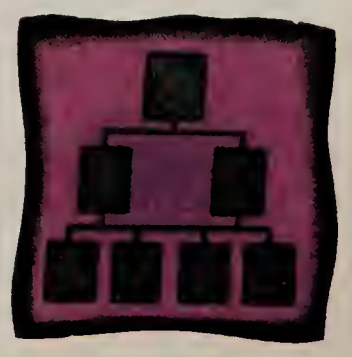
Your internal BPR team should become responsible for maintaining a business process repository, or knowledge base for your organization. They will be the best people to spot new refinements as they spring up in the business and prevent unnecessary reinventions of previously defined processes.

Information technology supports the BPR effort with rapid prototyping. I recommend a ratio of two rapid prototypers to each BPR team. BPR teams are typically fairly small. Six to eight people from different departments is a good size. You should integrate into each team one or two prototypers who are capable of quickly mocking up the graphical user interface (GUI) for all new or redesigned applications.



Typical rapid prototyping tools often used for this kind of work are: Microsoft Corp.'s Visual Basic or Access; Lotus Development Corp.'s Approach or Notes; Easel Corp.'s Synchronicity; Next Computer, Inc.'s NextStep; Neuron Data, Inc.'s Smart Elements or any application development environment in which you can generate screen displays, entry forms and query results in a pleasing, easy-to-modify GUI in a couple of hours at a sitting.

Information technology helps capture business processes, business rules and business objects. As the BPR teams map out the ideal business processes, using the screen prototypes to crystallize their understanding and more clearly specify the tasks required for each role or step in the new process, they will also converge on a shared mental model of the redesigned business. Typically, this shared mental model of the new processes, role definitions, activities, tasks and interactions is captured on paper or in some kind of electronic flowcharting tool.



Our recommendation, based again on the work of a number of organizations that have

Products that map the process

Some tools I've seen customers use for modeling their businesses include: **PTech, Inc.'s Process and Modelling** environment and **Intellicorp, Inc.'s Object Management Workbench**. Other candidates are **Inference Corp.'s ART-Enterprise**, **Interactive Development Environment, Inc.'s Software through Pictures** and **Texas Instruments, Inc.'s Business Design Facility**.

Or you can try the simpler approach of using workflow tools such as **Action Technologies, Inc.'s Action Workflow Analyst** or any of the other Flores/Winograd methodology-based workflow products such as **QDM, Inc.'s Quality at Work** or **BTD, Inc.'s Business Transformation Management**. Or try a workflow modeling and implementation tool that doesn't require an underlying methodology, such as **Staffware Corp.'s Staffware**, **IBM's FlowMark** or the other workflow products that let users represent and implement business processes across applications.

For capturing business rules, you might look at **Neuron Data, Inc.'s Smart Elements**, **Intellicorp's Kappa** (integrated with Object Management Workbench, above) or **Trinzic Corp.**'s suite of artificial intelligence-based products. Many customers I've talked to use object-oriented development environments, such as **Smalltalk** and **NextStep**, to define and capture business objects and software components.

Finally, there's a whole flock of products streaming into the market that offer high-level object modeling and application development — tools such as **Easel Corp.'s Synchronicity** are a harbinger of many more to come. And there's a set of tools specifically targeted to the BPR market. Look in particular for those that will let you generate code and/or integrate existing applications and development tools.

How to select a modeling environment

Here are the most important characteristics to look for when evaluating technologies to capture and model your business processes, business objects and business rules:

☞ **A businessperson** who is not a technologist should be able to look at the business model and understand it with minimal coaching.

☞ **A businessperson** should be able to modify the model to reflect his changing understanding of a dynamic business.

☞ **Business processes** should be explicitly represented in both a high-level and a more detailed (step-by-step) representation.

☞ **Business processes** and **business objects** should be interlinked. And, it should be possible to view just the process model or the object model for maximum clarity.

☞ **Business rules** should be explicitly defined (in English or the language of the business) and be viewable and changeable by business-people. There must be a way to represent and/or encapsulate existing data and application services in the business modeling tool.

You should be able to generate at least a high-level application specification, if not an entire optimizable application. If you can generate code, it should be quick and easy to modify the business model and recompile the application.

This is where RAD plays a key role.

Another tip is to work from the outside of your organization in. To ensure employee commitment to the BPR results, focus first on customer-driven processes and include key customers on your BPR team. If the process redesign is focused on satisfying the needs of external customers, it is much more likely to achieve broad-based buy-in than if it is focused solely on improving an organization's internal operations.

You also need to make sure that your company's technical infrastructure is up to the challenge of supporting these cross-departmental applications. The key areas to focus on are the robustness of your networking infrastructure and the status of your client/server computing platforms.

The companies that have been able to move quickly to deploy redesigned business processes are invariably those companies that have already implemented a coherent and well-managed LAN and WAN infrastructure, have already standardized on a common set of modern client/server platforms and have started implementing a number of underlying distributed computing services, such as database access middleware and/or transaction processing middleware. That structure will provide the underpinnings critical to BPR. ■

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pioneered in this area, is that instead of a flow-charting package, you select a high-level business process and object modeling environment from which you can, ideally, generate code. This does not have to be a full-fledged computer-aided software engineering tool, although that is an option.

You can also use a workflow package, an object-oriented development environment (many customers have reported success using ParcPlace Systems, Inc.'s VisualWorks Smalltalk environment), an Expert Systems modeling tool or a business object repository.

Information technology begins rapid application development in parallel with BPR. RAD is an iterative, continuous process. You don't save a lot of time by waiting until the requirements settle down. Instead, customers we talked to are finding that it's best to begin turning their GUI prototypes, business processes, business objects and business rules into application logic relatively early in the design process.

Then they use an iterative spiral approach to development, spiraling back through each phase — GUI design, business object specification, business process definition and business rules — about four times during the design cycle. During each spiral, the development team (which has now grown from two prototypers to about six people, maximum) is also looking for shared services that can be abstracted out of this particular business process and implemented across a number of business processes.

Ideally, the requirements for shared object or application services are handed off to a parallel team of application services/infrastructure designers. This is your core group of technical architects who will ensure maximum interoperability and robustness of distributed applications across your enterprise. Depending on the scope and scale of your operations, this infrastructure architecture team may be six people or 30 people.

Seybold is president of Patricia Seybold Group, a Boston-based consulting firm specializing in distributed computing and organizational change. Her Internet address is PSeybold @ psgroup.com

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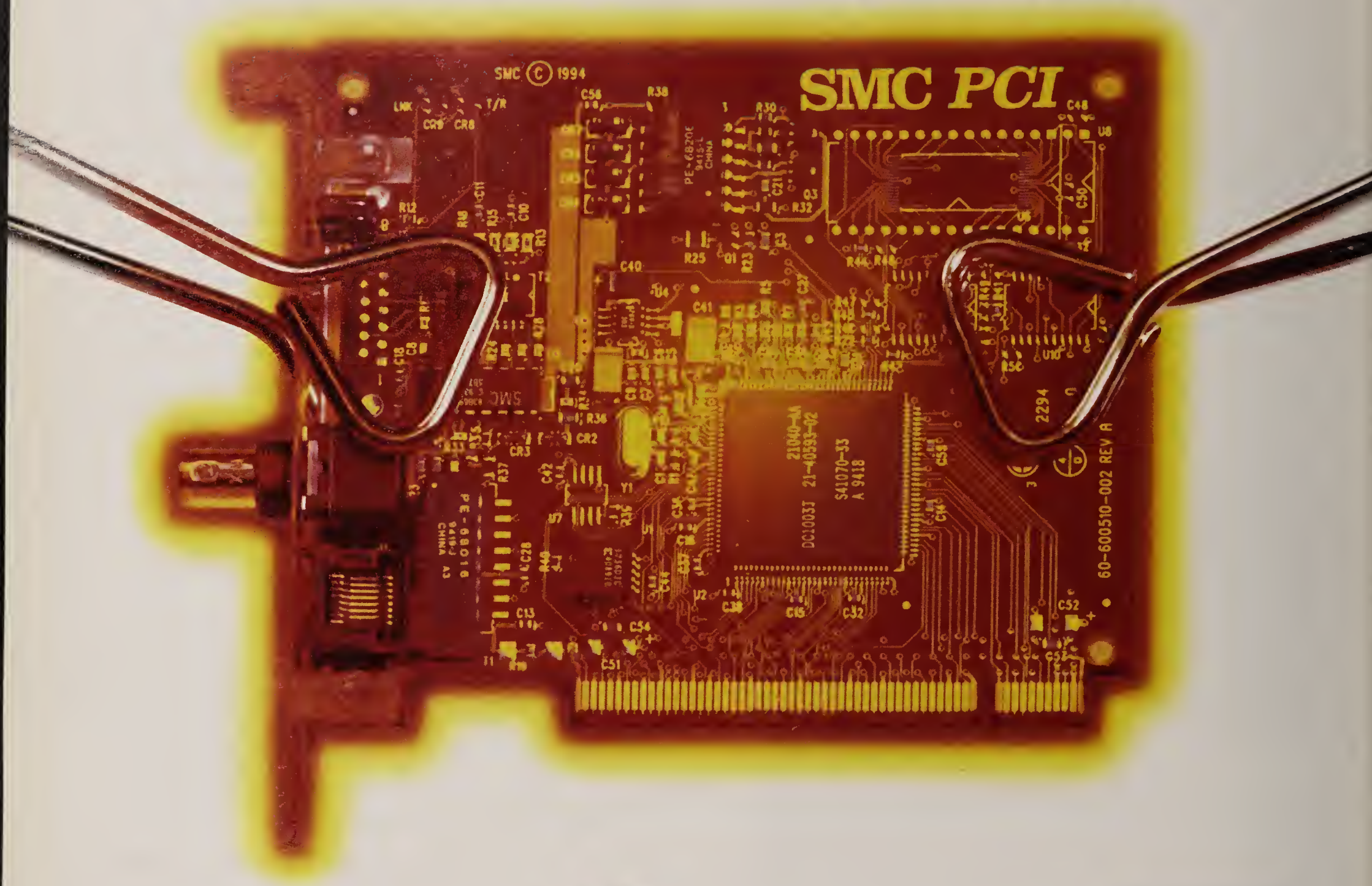

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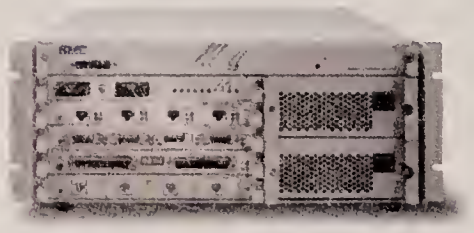

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Computer Careers

Waiting on WANs

WIDE-AREA NETWORKS HAVE CREATED ANOTHER SPECIALTY IN IS, NOT TO MENTION MORE OPPORTUNITIES

By Paul Karon

When the information systems planners at McCaw Cellular Communications, Inc. implemented a wide-area network (WAN) for nearly 300 sites across the country, a lot changed for the system's users.

That's hardly surprising. In fact, it was expected that the network would offer a giant leap forward in computing functionality. But what was less predictable was how the advent of a WAN would affect the jobs and careers of the McCaw IS staffers who designed, installed and now support the system.

"There's no question that the wide-area networks have changed job functions all through both the IS and telecommunications organizations," says Frank Merendino, private branch exchange administrator at McCaw in Seattle.

The same thing is happening almost everywhere. And with WANs becoming increasingly common, the number of IS professionals whose jobs have already been affected, or soon will be, is growing. In short, WANs have become another specialty within IS departments.

The interdependence of systems that WANs create is just one reason the growth of WANs in the enterprise has started to change traditional IS job descriptions. Everyone — programmers, network analysts, help desk professionals and others — is being affected.

"In the most basic sense, wide-area networking has changed job functions because it has caused people to work more as a team and less as isolated islands," Merendino says. "The way everything is connected now, everything you do on the network affects everything else."

So what job opportunities have WANs brought? At McCaw, it sparked the formation of the Enterprise Network Support Group, which monitors the WAN 24 hours a day to ensure its smooth operation. The help desk can also change dramatically. Questions shift away from application packages toward networking, and they concern things such as accessing file servers across the network.

"The biggest problem we have with wide-area network technology right now is allocating the research resources that are needed to make sure we're taking advantages of the best in WAN technology," says Brent Ririe, director of IS at NuSkin International, Inc. in Provo, Utah.

NuSkin has already dedicated one of its network services specialists solely to research and development, including the sampling, testing and planning of WAN hardware and software.

In short, telecommunications professionals must become more savvy about IS, and IS professionals must become quasi-experts in telecommunications. "The final outcome is that a lot of people's jobs have actually changed significantly," Merendino says. But more importantly, IS managers say, the WANs are creating advancement opportunities for IS specialists. ■

Karon is a free-lance writer in Los Angeles.

WAN awakenings

A BIG CONTRIBUTOR TO THE NEW CAREER PRESSURES THAT WANS ARE CREATING COMES FROM THE INCREASED COOPERATIVE PLANNING BETWEEN TELECOMMUNICATIONS AND INFORMATION SYSTEMS TECHNOLOGIES. "WE HAVE OUR WIDE-AREA NETWORKING UNDER THE NETWORKING SERVICES HAT, BUT IT COULD JUST AS EASILY BE UNDER THE TELECOM HAT," SAYS BRENT RIRIE, DIRECTOR OF IS AT NUSKIN.

THIS BLENDING OF TELECOMMUNICATIONS AND IS HAS ALREADY HAPPENED AT NOVELL, INC.'S WORDPERFECT APPLICATIONS GROUP UNDER THE MANAGEMENT OF MIKE DANIELS, SENIOR DIRECTOR FOR COMMUNICATIONS AND IS. DANIELS PREDICTS THIS WILL CREATE HYBRID POSITIONS FROM TRADITIONALLY SEPARATE IS AND TELECOM JOBS, PARTICULARLY IN THE NETWORKING AREA.

"I'VE FELT FOR A NUMBER OF YEARS THAT THE TELECOMMUNICATIONS, COMPUTER AND ELECTRONICS INDUSTRIES ARE HEADING ON A CONVERGENT PATH," DANIELS SAYS. "AS EACH AREA GROWS, IT WILL START OVERLAPPING THE FUNCTIONS OF THE OTHERS." FOR EXAMPLE, HE SAYS, MORE NETWORK ANALYSTS ARE EMERGING WHOSE SPECIALTY IS THE TRANSMISSION OF INFORMATION THROUGH THE INFRASTRUCTURE FOR THE NETWORK'S APPLICATIONS, WHETHER IT IS STANDARD DATA, VOICE OR VIDEO.

MEANWHILE, OTHER NETWORK ANALYSTS WILL BE MORE CONCERNED WITH USERS AND THEIR NEEDS — A BIG STEP AWAY FROM THE TRADITIONAL LAN ENGINEER WHO HAD TO BE CONCERNED WITH THE USER AS WELL AS THE TRANSMISSION OF DATA.

SIDELINES

Personality may predetermine promotion

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Training take-out

As companies continue to outsource training, great jobs will open up at external training firms

By Lynn Haber

Cutbacks in corporate training departments and increased revenue in the training industry mean one thing: Independent training firms are fast becoming a promising avenue for aspiring instructors.

"We're seeing an exodus of people from internal training departments to private training companies," says Ellen Hersh, senior analyst for information technology training and education services at International Data Corp. in Framingham, Mass.

With 28 years of experience as an information technology instructor, Sandy King, executive information systems training consultant at Paul Revere Insurance Group in Worcester, Mass., says she has seen the hiring pendulum swing both ways. "Today, the trend is to outsource [information technology] training." In fact, only very large companies can afford large training staffs, says King, who outsources most of Paul Revere's technical training, keeping the customized portions in-house.

Hot spots

As did many of her peers, King moved into training to broaden her horizons. And what better place to do it? Training demands are all over the board, but for the moment, most are centered around client/server, Windows and DOS applications and technical education for Notes, Unix, the Internet and networking.

Another emerging area, says Tom Cox, general manager at Executrain in Boston, is customized training for internally developed Windows-based applications. "We get calls to do custom training for 400 to 500 people at companies that don't have their own training departments," he says.

Executrain has 12 full-time trainers in Boston and has had a continuous need for more during the last two years, Cox says. The typical Executrain instructor is 20 to 30 years old, has a college degree, has worked in sales, finance or in a creative department such as advertising and enjoys working with computers.

The company also looks for enthusiastic people with good communication skills. A technical background is helpful but not always necessary.

Technical education centers such as MicroAge Learning Center in Parsippany, N.J., have similar criteria but place a heavier emphasis on technical experience. "A solid technical background is important. We can teach them training skills," says MicroAge President Dennis Samuelson.

Career directions

Career growth at training centers reportedly follows one of two paths: technical or management. Instructors can expand into new technology areas or manage other instructors. Either way, the salary potential for instructors is good — anywhere from about $25,000 to $70,000 per year, according to industry experts.

Opportunities also exist for independent information technology trainers. Amy Springer, who has nine years of experience in high-tech training, seven of which have been as an independent Certified NetWare Instructor, is contracting for MicroAge.

According to Springer, working as an independent trainer offers flexibility, the choice of teaching what she likes and a good salary. The drawbacks are primarily financial and include having to maintain certification, no job benefits and no guarantee that work will always be there when she wants it. "Also, job growth opportunities are only possible when you work for a company," she says.

Outsourcing trends

ALL COMPANIES ARE SPENDING MORE ON EXTERNAL TRAINING, BUT SMALL COMPANIES SPEND THE MOST

Company size	Percent of budget spent on external training		Change
	1993	1995	
Small (1-999 employees)	27.5%	35%	7.5%
Medium (1,000-10,000 employees)	15%	20%	5%
Large (10,000-plus employees)	5.5%	13%	7.5%

Source: International Data Corp., Framingham, Mass.

Dave Williams, for example, a Novell program manager at MicroAge, has a degree in finance, but his first job was at a home health care company developing customized code for a scheduling, billing and payroll application.

When the company migrated from a midrange system to a LAN, Williams' technical expertise expanded to include Novell, Inc.'s NetWare and LAN administration. While taking courses at MicroAge, Williams said he discovered the opportunities for teaching and made the switch.

Now a Certified NetWare Engineer and Instructor, Williams works about 60 hours a week. He spends 14 days and a couple of evenings each month teaching. Other days are spent preparing courseware and managing other instructors.

While the attraction to training companies may be rooted in the fact that the sole focus is on education, not everyone is suited to be in front of a class. For that reason, working in a corporate training department and having greater job diversity might be more appealing. Either way, information technology training is in demand.

Haber is a free-lance writer in Boston.

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PRODUCT DEVELOPMENT ENGINEER, NC ALGORITHMS for a Southwestern Ohio MCAE Company. DUTIES: Develop user oriented test cases that validate the functioning of NC toolpath generation and verification software that is part of a commercial Mechanical Computer Aided Engineering (MCAE) system. Define user level requirements for new functionality to be implemented as part of the NC toolpath generation and verification software; design the algorithms; implement the functionality in high quality software that is very reliable and is well integrated with the existing functionality; support the user level documentation of the new functionality; help to maintain the new software when it is released to customers; review and critique competing NC software products. All of the above responsibilities apply specifically to the functional testing and software development for NC toolpath generation and NC toolpath verification software using non-uniform rational B-splines (NURBS) geometry in a hybrid boundary representation-constructive solid geometry solid modeler written in Fortran and C. EDUCATION: Bachelor of Science in Manufacturing, Industrial, Mechanical or Electrical Engineering, Computer Science, Physics or Mathematics. No experience required in the above duties but applicants will qualify with two years of experience as described hereinafter. Required working experience must have occurred after obtaining a bachelor's degree. One year experience in the job described or one year experience must be involved with multi-axis NC milling machines as either a manufacturing engineer or as a design engineer and this experience must emphasize NC machines, machining operations and machine tools (especially lathes and mills), but employer will accept instead, a master's degree in mechanical engineering, manufacturing engineering or mathematics, provided that the applicant demonstrates completion of two three quarter hour manufacturing courses (graduate or undergraduate) with a major emphasis on NC machines, machining operations, machine tools, and programming of NC machines. Additional one year of experience must have been in the job described or as a software engineer collaborating (personal contribution of at least 5000 lines of source code) in development of a large commercial software system (greater than 1 million lines of source code) implementing NC toolpath generation and verification. Alternatively, employer will accept a master's degree in mechanical engineering, manufacturing engineering or mathematics with a master's project or thesis, chiefly devoted to development of NC toolpath generation and/or verification, contributing more than 2000 lines of sources code to a larger software system (at least 100,000 lines of source code) devoted to the automation of an engineering or manufacturing discipline. Completion of all master's degree requirements except thesis defense is considered equivalent to receipt of degree. All applicants must demonstrate: 1) ability to read, write, speak and understand English; 2) completion of a documented design or manufacturing project using a commercial Mechanical Computer Aided Engineering (MCAE) system; 3) six quarter hours (graduate or undergraduate) of course or academic project work involving machining analytic and complex surfaces; 4) three quarter hours of course work in analytic geometry in which non-uniform rational B-splines (NURBS) was a major emphasis; 5) one three quarter hour course in which candidate used C programming to implement major functions with a personal contribution of 2000 lines of C source code; 6) three quarter hours of course work in data structures, operating systems, programming languages and software architecture. Any one course may be used to satisfy any number of the above requirements. Employer will accept equivalent academic units for any stated academic requirements. 40 hours per week, 8 a.m. to 5 p.m., Mon-Fri (exempt). SALARY: $38,000-$44,000. Must have proof of legal authority to work indefinitely in U.S. Send resume IN DUPLICATE (no calls) to G. Maugans, JOB#00210, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, Ohio 43126. EOE.

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The individual we seek will possess a Bachelor's degree (Master's preferred) in a related discipline, strong written/verbal communication skills, and 4 to 5 years of solid DP experience, at least 1 to 2 of which involved solid Oracle database administration experience in a Unix environment (IBM AIX and SCO Unix preferred). Demonstrated applications development background with strong SQL and PL/SQL knowledge and the ability to work in a distributed team environment are essential. Prior "C" and Unix shell experience and familiarity with MS-DOS/Windows/Mac operating environment as well as data analysis/modeling are highly desired.

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SOURCE: Skill Survey of *Computerworld's* Audience, September 1993.

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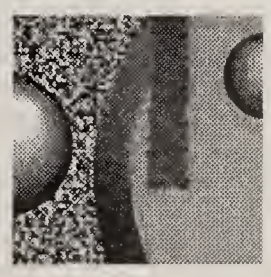

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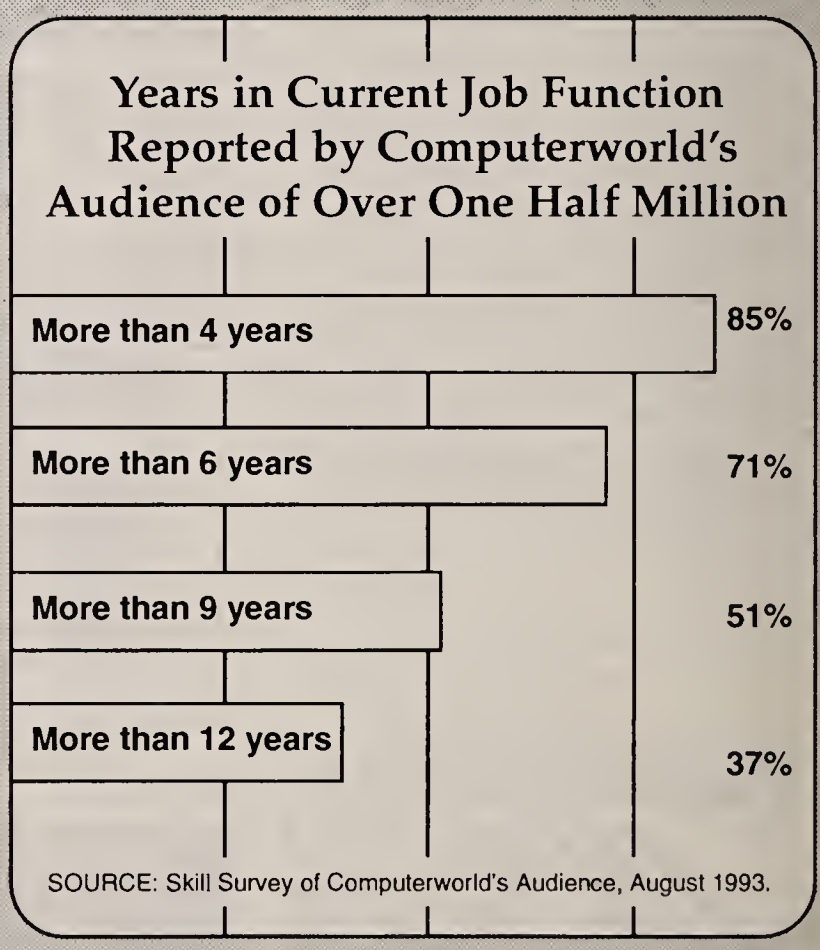

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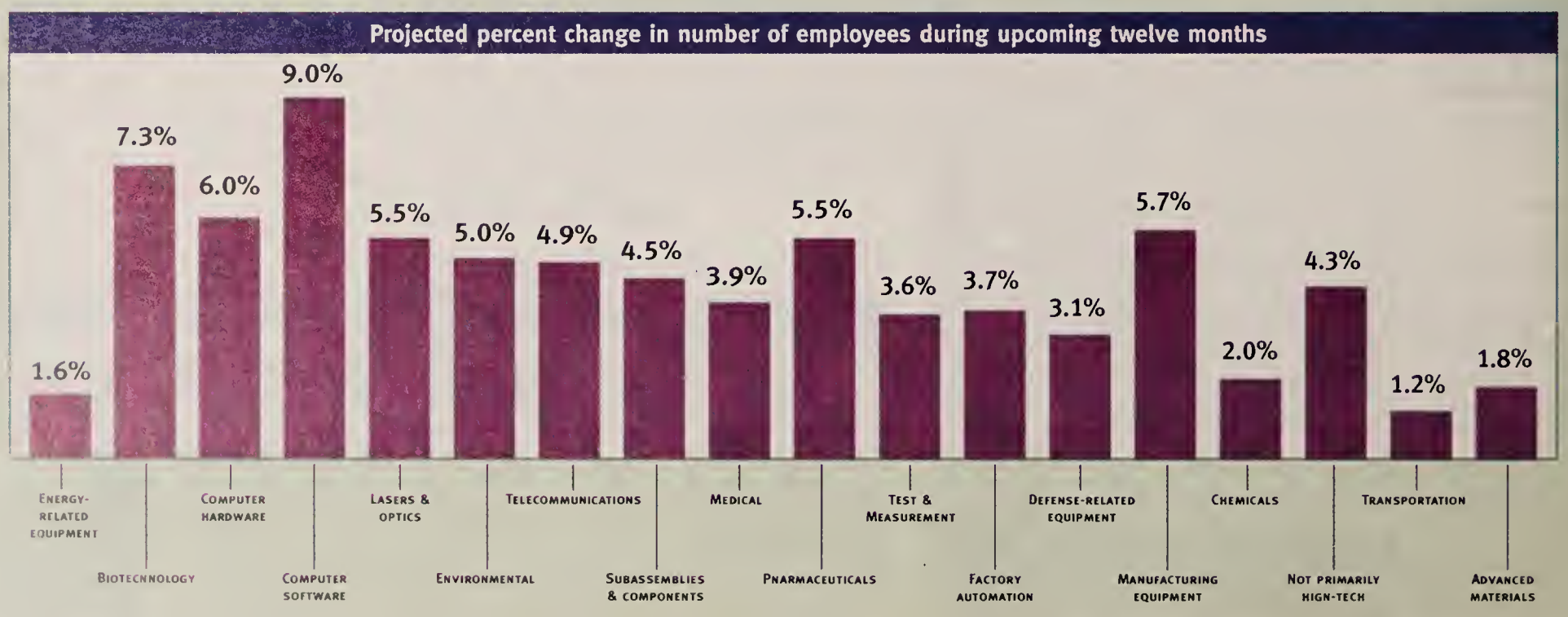

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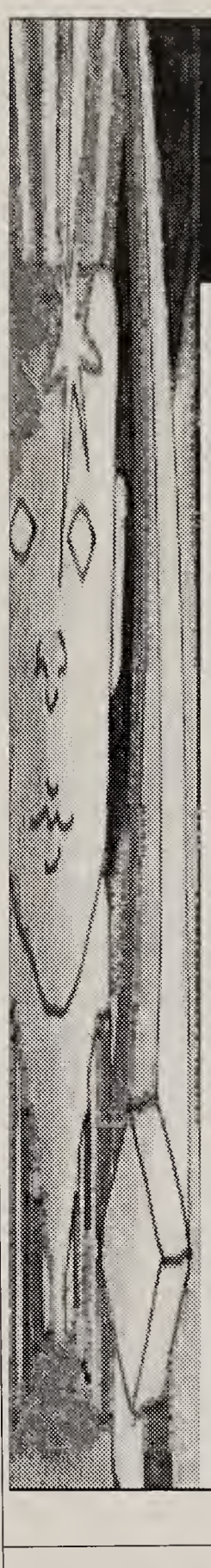

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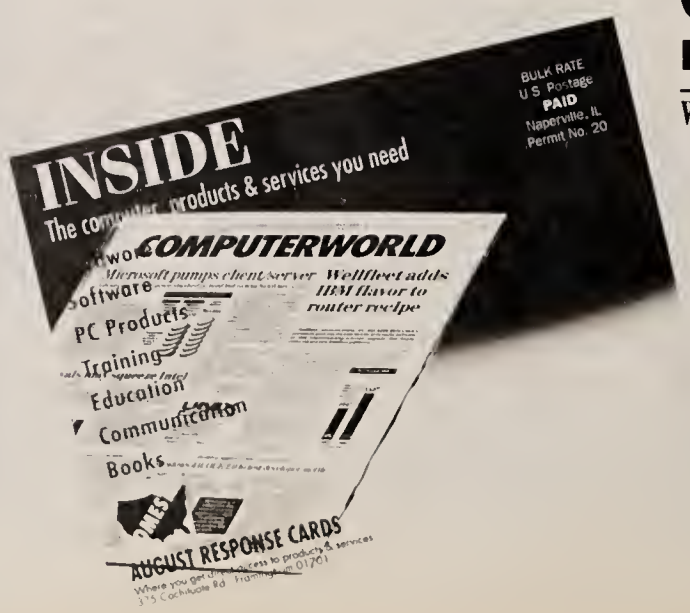

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■ Client/server systems management is becoming more defined. See page 107.

IN security

Systems management tools plug some of the security holes in distributed systems, but they don't address the big picture yet

By Bronwyn Fryer

Joe Tumminaro shudders when he thinks about the risks of an intruder sniffing around one of his clients' networks. "If someone wants to put mission-critical applications on a server in a distributed environment and asks me if it's secure enough, I get a lump in my throat," says the vice president of technology at J. Frank Associates in Palo Alto, Calif. "Networks are inherently insecure."

While people continue to ponder whether client/server and security are almost a contradiction in terms, the risk of break-ins, ranging from passive listening, or sniffing, to an active attack on critical data, is much greater than in predownsized days.

This predicament cries out for sound security systems management, but only a handful of tools comes close to filling the gaps in client/server and Unix environments. Integrated products, for example, attempt to provide soup-to-nuts management functions in a single package, some of which include security (see Product Guide page 107); point products focus on a single task.

Point products specializing in security cover a broad spectrum of functions, including user authorization, encryption, authentication, policy issuance and maintenance and time-outs. They can be expensive, ranging from $2,000 to $10,000 and above, usually priced on a per-client and per-server basis (see box at right).

While these products enhance users' ability to perform authentication and authorization at the platform level, most fail to assure the security of in-transit data, notes Jim Patterson, staff architect for information security at Wells Fargo Bank in San Francisco. Patterson is searching for a product for the bank's 700-server and 6,000-user client/server network. "Most products don't perform security at the transmission level, so it would be easy to flood a network with bogus packets of data," he says. "Maintaining the availability of the network is the hardest nut to crack."

Stalling for standards

In fact, many security managers are waiting for network management security standards before deciding what product to implement. "We're reluctant to jump in with both feet if what we select is not the standard," Patterson notes.

The Open Software Foundation is working on a broad set of architectural specifications called the Distributed Computing Environment (DCE); its security element was founded on Kerberus, an authentication and secure messaging encryption technology developed through MIT's Project Athena. IBM and Hewlett-Packard Co. are marketing security products as part of their DCE product offering.

Though the raw application programming interface for Kerberus may be downloaded from the Internet (Athena_dist.mit.edu) as freeware, it cannot be integrated into a client/server network without significant expertise.

One vendor, Cygnus Support in Mountain View, Calif., supports the public domain version, but most companies opt for more polished support tools based on Kerberus.

No cure-all

As with their integrated counterparts, point products struggle to maintain security over multiple platforms.

"The products out there don't really provide the integration across all the networks and platforms in enterprise systems," notes Nagraj Alur, principal at Database Associates in Morgan Hill, Calif. "There are specific local solutions for workgroups, but [nothing] addresses the big picture."

Despite shortcomings, security offerings are expected to expand. In turn, emphasis will shift from product availability to getting point products to work with one another.

"Vendors of security products are expanding their support within and across platforms types," says Michael Sivo, manager of Technology Integration Services at Andersen Consulting in Cleveland. "Unfortunately, there are all kinds of little intricacies associated with linking the different tools, and all the platforms you want to protect."

For this reason, most users will end up with a mix-and-match solution, Patterson predicts: "Most people will probably end up using a vendor or combination of vendors for one part of the problem and then using homegrown programs to fill in the holes." ■

Fryer is a free-lance writer in Boulder Creek, Calif.

USE PROTECTION

Security products for client/server and Unix environments include the following:

Axent Technologies in Rockville, Md., a division of Raxco, Inc.: Offers a range of cross-platform client/server security products under the name of OmniGuard. They cover everything from police management and enforcement to user identification. Prices range from $395 to $995 per client and $1,995 to $3,995 per server.

CyberSafe Corp., formerly Open Computing Security Group, in Redmond, Wash.: Offers Challenger, a Kerberus-based product with extended server, slave server, network application server, tool kits and per-client modules ported to a variety of platforms. Prices range from $95 per Macintosh or Windows client to $4,800 for the extended server.

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OpenVision, Inc. in Pleasanton, Calif.: Offers OpenVSecure, a product that provides Kerberus security with tools for administration, quality control and other modifications. Priced at $320 per client and $3,200 per server. OpenV-Gatekeeper is a host-based access-control product. Its prices range from $1,000 per client to $10,000 per server.

Qualix Group, Inc. in San Mateo, Calif.: Offers Unishield, centralized access security management software for distributed Unix environments. Features include the ability to limit access hours, activate and deactivate accounts, control passwords and monitor status. Priced at $995 per workstation.

—Bronwyn Fryer

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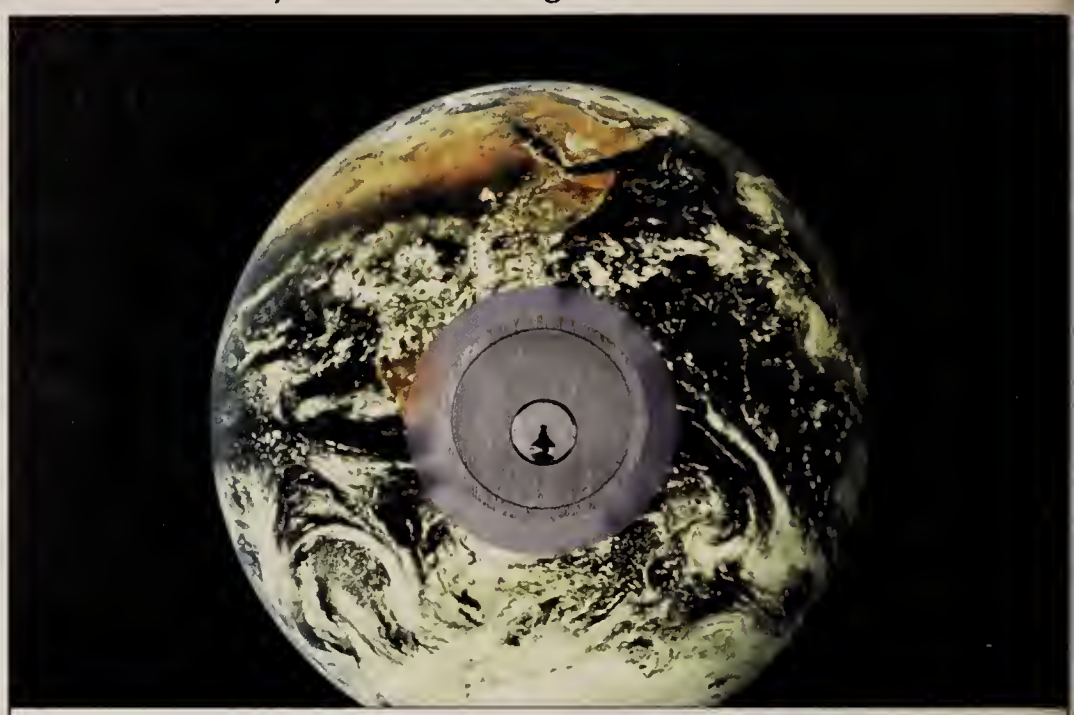

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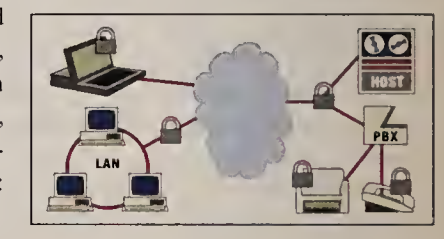

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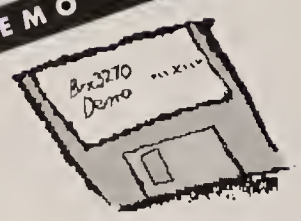

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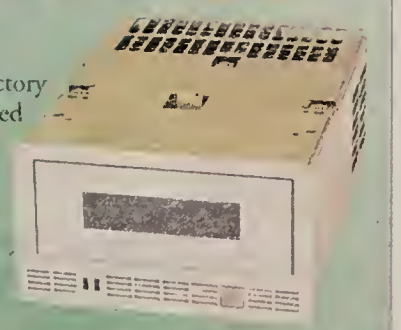

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Proposal Evaluation: The Authority will utilize the following evaluation criteria in evaluating proposals for purposes of award of any Contract hereunder. In order to be eligible for an award of Contract and notwithstanding its relative qualifications for purposes of the evaluation criteria and in other respects, the proposer must demonstrate to the satisfaction of the Authority, that it is in all respects a responsible party, i.e., that is has the integrity, skill and experience to faithfully perform the Contract, and the necessary facilities and financial resources to do the Work in accordance with the Contract Document, and be otherwise qualified and eligible to receive an award under applicable laws and regulations. The factors that the Authority will consider in evaluating proposal will include in relative order of importance the following: Proposer's overall Technical Qualification to include the adequacy and completeness of the proposal with regard to all matters called for in the RFQ; Overall Project Cost, including such matters as net cost savings and/or additions resulting from proposed changed to Terms and Conditions, as well as from innovations with respect to providing maintenance services improvements. Professional and Technical Qualifications of Proposer, including, but not limited to the following aspects: specific performance record with the Authority, the MTA or their affiliates or subsidiaries or the City or the State; financial resources and stability, including the proposer's cash flow and balance sheet and the financial demands that will be imposed on the proposer by its performance of the Contract; the size, capacity and capability of the proposer in relation to the work to be performed and in relation to other work being performed by the proposer to include the effect on the proposer of other work being performed, or about to be performed by it; proposer's operating abilities to support the various levels of operational software utilized on Authority systems either via direct support of third (3rd) party maintainer. Proposer's experience and demonstrated ability to maintain data processing equipment of several manufacturers within one organization. Proposer's ability to obtain repair parts and system upgrades. Other Relevant Matters, including but not limited to: proposed improvements, innovations, enhancements or other modifications to the Contract Terms and Conditions (aside from cost implications thereof); Experience of assigned personnel including subcontractors must possess the technical qualifications to perform the work; Quality of written proposal and oral presentation.

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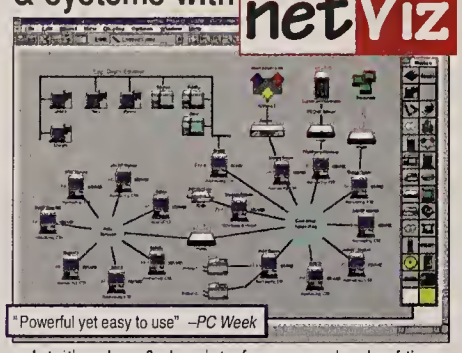

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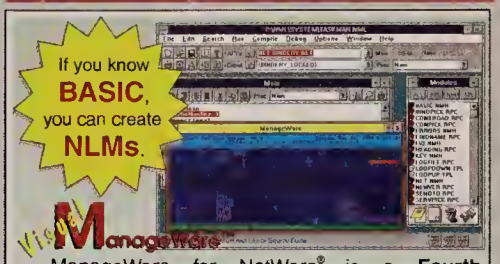

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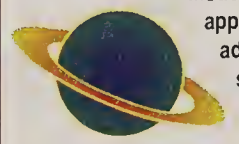

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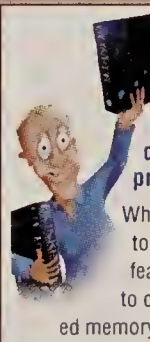

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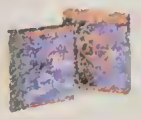

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Oct. 7 Stock Ticker

Gainers

Percent

Printronix Inc.	22.7
IPL Systems Inc.	17.2
Netrix Corp.	13.9
Borland Int'l Inc.	13.2
Xylogics Inc.(H)	13.1
Ross Systems	12.5
McAfee Associates	12.2
Cray Computer	10.0

Dollar

Printronix Inc.	4.25
Xylogics Inc.(H)	3.25
Apple Computer Inc.	3.00
Adobe Systems Inc.	3.00
Wellfleet Communications	1.75
Stratacom Inc.	1.63
Dell Computer Corp.	1.50
LSI Logic Corp.(H)	1.50

Losers

Percent

CrossComm	-17.9
Advanced Micro Devices	-17.6
Computer Network Tech.	-16.4
4th Dimension	-16.4
SEI Corp.	-13.6
Radius Inc.	-11.6
Intergraph Corp.	-11.1
Iomega Corp.	-11.1

Dollar

Advanced Micro Devices	-5.25
Motorola Inc.	-3.00
SEI Corp.	-3.00
Microsoft Corp.	-3.00
Intuit Inc.	-2.88
Cabletron Systems	-2.63
Texas Instruments	-2.63
Intel Corp.	-2.50

Semiconductor stocks suffered steep declines last week, with Advanced Micro Devices, Inc. expecting reduced earnings for the fourth quarter. Rumors that Motorola, Inc. might acquire Apple Computer, Inc. led to a jump in Apple shares on Wednesday, but by Thursday prices retreated.

Industry Almanac

IPO drought continues

The decline of initial public offerings (IPO) from computer companies, which started in June, continued in the third quarter.

Only eight firms with deals valued at more than $50 million went public during the quarter, according to Technologic Partners, Inc. in New York. This contrasts with IPOs from 18 firms in the second quarter and 21 firms in the first quarter of 1994.

So far, all the new issues from the third quarter are trading at or above their IPO price. **Cascade Communications Corp. (CSCC)**, **Spectrian Corp. (SPCT)** and **Adtran, Inc. (ADTN)** have seen their shares jump in value.

Cascade, a manufacturer of networking switches for frame-relay, Switched Multimegabit Data Service and Asynchronous Transfer Mode applications, has seen its share prices triple since its July IPO. Exemplifying the dearth of new computer stock issues, Cascade was the only technology stock to go public that month.

Robert Natalc, an analyst at Standard & Poor's Equity Group in New York, said the low number of technology IPOs could be attributed to tough market conditions. Howevcr, the technology sector has been pretty strong recently, and as a result, thcre have been a few more filings in the past wecks, he said.

With three filings in late September, investors may see more computer stock IPOs throwing their hat into the ring in the upcoming quarter. — *Tim Ouellette*

Searching for a few good stocks...

High-tech IPOs dropped off considerably this quarter, with only eight new issues on the market. (Only deals valued at $50 million or more are listed.)

Company	IPO date	IPO price	Oct. 7 price
Cascade Communications Corp.	7/29	15	45
Spectrian Corp.	8/3	12 1/2	20
SystemSoft Corp.	8/4	5 1/2	6
Adtran, Inc.	8/10	18	30 1/4
Wave Systems	8/31	5	5 1/8
IPC Information Systems, Inc.	9/26	15	15
Affiliated Computer Services, Inc.	9/26	16	20 1/2
Adflex Solutions, Inc.	9/27	13 1/2	15 3/4

Source: Technologic Partners, Inc., New York

Exch	52-Week Range			Oct. 7 3 PM	Wk Net Change	Wk Pct Change
Communications and Network Services						**OFF 1.65%**
OTC	39.75	13.69	3 COM Corp.	38.00	0.13	0.3
NYS	44.25	36.25	AMERITECH Corp.	38.75	-1.63	-4.0
NYS	61.38	49.50	AT&T	52.00	-2.13	-3.9
OTC	26.50	12.75	Banyan Systems Inc.	17.00	-0.50	-2.9
NYS	69.13	49.00	Bell Atlantic Corp.	51.00	-2.00	-3.8
NYS	63.88	53.00	Bellsouth Corp.	54.00	-2.25	-4.0
NYS	21.50	9.38	Bolt, Beranek & Newman	15.63	-1.50	-8.8
OTC	15.75	9.00	Brooktrout Technology	10.00	-0.25	-2.4
NYS	53.00	33.06	Cabletron Systems	45.25	-2.63	-5.5
OTC	43.00	10.00	Centigram Communications	15.75	-0.63	-3.8
OTC	60.25	31.50	Chipcom Corp.	52.13	-0.88	-1.7
OTC	40.75	18.75	Cisco Systems Inc.	27.56	0.44	1.6
OTC	18.38	8.75	Compression Labs Inc. (L)	8.75	-0.38	-4.1
OTC	12.38	5.13	Computer Network Tech.	6.38	-1.25	-16.4
OTC	33.75	8.00	CrossComm	8.00	-1.75	-17.9
OTC	3.00	1.50	DataSwitch Corp.	2.19	-0.06	-2.8
OTC	36.56	17.88	DSC Communications	29.00	0.00	0.0
NYS	30.25	8.25	General Datacomm Inds.	29.25	1.00	3.5
NYS	39.88	29.50	GTE Corp.	30.00	-0.63	-2.0
NYS	95.97	78.63	ITT Corp.	81.88	-1.75	-2.1
OTC	29.63	21.38	MCI Commmunications Corp.	24.88	0.00	0.0
OTC	8.25	2.50	Microcom Inc.	7.38	-0.25	-3.3
OTC	24.00	11.25	NetManage Inc.	20.75	-0.25	-1.2
OTC	7.25	4.00	Netrix Corp.	5.13	0.63	13.9
OTC	8.75	3.25	Network Computing Devices	3.75	0.00	0.0
NYS	14.88	7.38	Network Equipment Tech.	12.88	-1.50	-10.4
OTC	23.38	12.25	Network General	19.38	-0.25	-1.3
OTC	9.63	6.38	Network Systems Corp.	7.13	-0.13	-1.7
OTC	72.25	26.50	Newbridge Networks Corp.	31.88	0.00	0.0
NYS	37.75	24.38	Northern Telecom Ltd.	34.00	-1.13	-3.2
OTC	26.63	13.38	Novell Inc.	14.50	-0.25	-1.7
NYS	46.00	33.25	Nynex Corp.	38.50	0.13	0.3
OTC	30.00	15.50	Octel Communications Corp.	21.00	0.75	3.7
OTC	20.00	9.00	Optical Data Systems Inc.	17.75	-1.00	-5.3
OTC	7.50	3.13	Penril Data Comm Networks	3.25	-0.25	-7.1
OTC	20.75	10.00	Picturetel Corp.	16.50	-1.00	-5.7
OTC	8.25	2.13	Proteon Inc.	5.63	-0.25	-4.3
OTC	14.38	2.75	Racotek Inc.	4.00	0.00	0.0
NYS	22.63	12.44	Scientific Atlanta Inc.	19.13	-1.19	-5.8
NYS	45.25	36.75	Southwestern Bell Corp.	41.13	-1.38	-3.2
NYS	40.25	31.38	Sprint Corp.	37.63	-1.00	-2.6
OTC	26.75	13.38	Standard Microsystems Corp.	20.38	0.63	3.2
OTC	44.75	13.00	Stratacom Inc.	39.38	1.63	4.3
OTC	33.75	13.13	Synoptics Communications	15.13	1.13	8.0
OTC	15.25	3.88	Telebit Corp.	5.19	0.38	7.8
OTC	46.00	23.00	US Robotics	31.50	-2.00	-6.0
NYS	50.75	37.75	US West Inc. (L)	38.00	-0.88	-2.3
OTC	43.88	18.75	Wellfleet Communications	21.00	1.75	9.1
OTC	28.25	12.75	Xircom	20.25	-0.44	-2.1
OTC	28.50	13.25	Xylogics Inc. (H)	28.00	3.25	13.1
OTC	29.25	11.25	Xyplex Inc.	27.88	0.06	0.2
PCs and Workstations						**UP 0.16%**
OTC	7.50	2.88	Advanced Logic Research	4.00	-0.13	-3.0
OTC	38.50	22.75	Apple Computer Inc.	36.75	3.00	8.9
OTC	33.00	12.00	AST Research Inc.	12.38	-0.75	-5.7
NYS	39.88	19.75	Compaq Computer Corp.	32.75	-0.13	-0.4
OTC	39.50	15.88	Dell Computer Corp.	39.00	1.50	4.0
OTC	25.00	9.25	Gateway 2000 Inc.	19.13	0.63	3.4
NYS	93.63	67.75	Hewlett Packard Co.	86.88	-1.00	-1.1
NYS	26.88	18.75	Silicon Graphics	25.00	-0.75	-2.9
OTC	31.38	18.25	Sun Microsystems Inc.	29.38	-0.63	-2.1
NYS	50.75	30.75	Tandy Corp.	42.00	-1.38	-3.2
OTC	5.13	2.38	Zeos International Ltd.	3.31	0.13	3.9
Large Systems						**OFF 0.83%**
ASE	10.25	4.38	Amdahl Corp.	8.50	-0.50	-5.6
NYS	8.50	4.38	Convex Computer	7.75	-0.38	-4.6
OTC	4.00	0.50	Cray Computer	1.38	0.13	10.0
NYS	33.75	19.13	Cray Research Inc.	20.63	0.25	1.2
NYS	10.75	6.63	Data General Corp.	10.00	0.00	0.0
NYS	39.13	18.25	Digital Equipment Corp.	26.13	-0.38	-1.4
OTC	6.38	2.38	Encore Computer Corp.	4.56	0.00	0.0
NYS	52.25	41.38	Harris Corp.	48.00	-0.63	-1.3
NYS	71.38	42.50	IBM	71.00	1.25	1.8
OTC	18.75	7.75	NetFrame	10.75	-1.25	-10.4
OTC	26.00	3.88	Parallan Computer	4.75	0.00	0.0
OTC	16.50	5.38	Pyramid Technology	8.50	-0.13	-1.4
OTC	20.00	11.13	Sequent Computer Sys.	17.25	0.38	2.2
OTC	6.84	2.88	Sequoia Systems Inc.	4.50	-0.38	-7.7
NYS	38.63	22.88	Stratus Computer Inc.	35.75	0.13	0.4
NYS	16.75	10.00	Tandem Computers Inc. (H)	15.88	-0.63	-3.8
OTC	30.00	3.88	TriCord Systems	5.63	0.13	2.3
NYS	16.50	8.63	Unisys Corp.	11.13	0.38	3.5
Software						**OFF 1.03%**
OTC	37.00	19.00	Adobe Systems Inc.	35.75	3.00	9.2
OTC	8.13	4.38	American Software Inc.	4.50	-0.13	-2.7
OTC	15.75	6.75	Ask Computer Systems	13.13	0.00	0.0
OTC	66.00	37.00	Autodesk Inc.	64.00	1.44	2.3
OTC	3.88	1.75	Bachman Info. Systems	2.44	0.06	2.6
OTC	28.25	20.50	BGS Systems Inc.	23.00	-2.00	-8.0
OTC	71.00	40.50	BMC Software Inc.	45.00	-0.25	-0.6
OTC	31.00	22.50	Boole & Babbage	29.88	-0.88	-2.8
OTC	18.25	8.50	Borland Int'l Inc.	12.88	1.50	13.2
OTC	25.00	6.75	Brock Control Systems Inc.	8.63	0.38	4.5
OTC	4.63	2.38	CE Software	2.63	-0.19	-6.7
ASE	30.34	6.25	Cheyenne Software Inc.	9.50	0.13	1.3
OTC	14.25	8.25	Cognos Inc.	13.38	0.38	2.9
NYS	45.88	27.38	Computer Associates	45.75	0.88	1.9
NYS	5.38	2.13	Computervision Corp.	3.25	0.13	4.0
OTC	49.25	22.75	Compuware Corp. (H)	48.00	-0.25	-0.5
OTC	14.00	9.00	Comshare Inc.	11.75	0.25	2.2
OTC	25.00	14.88	Corel Corp.	21.38	0.50	2.4
OTC	6.75	2.88	Easel Corp.	3.63	0.00	0.0
OTC	29.25	13.75	Filenet Corp.	22.50	-0.25	-1.1
OTC	25.00	3.00	4th Dimension	6.38	-1.25	-16.4
OTC	16.25	7.50	Frame Technology	16.00	0.25	1.6
OTC	11.00	7.00	Group I Software	8.00	0.00	0.0
OTC	31.75	6.75	Gupta	10.25	0.25	2.5
OTC	12.00	5.88	Hogan Systems Inc.	6.25	-0.69	-9.9
OTC	38.50	18.00	IMRS (H)	36.50	-0.50	-1.4
OTC	39.75	11.50	Information Resources	11.50	-1.25	-9.8
OTC	28.00	14.25	Informix Corp. (H)	26.25	-1.13	-4.1
OTC	11.25	8.00	Intergraph Corp.	8.00	-1.00	-11.1
OTC	8.75	2.50	Interleaf Inc.	4.25	-0.06	-1.4
OTC	15.50	7.50	Intersolv Inc.	14.75	-0.50	-3.3
OTC	50.00	27.00	Intuit Inc.	41.25	-2.88	-6.5
OTC	18.75	2.25	Knowledgeware Inc.	3.63	0.13	3.6
OTC	34.75	19.00	Legent Corp.	27.00	0.25	0.9
OTC	86.50	29.75	Lotus Development	36.38	-0.50	-1.4
OTC	18.00	6.00	Magic Software Enterprises	8.75	-0.38	-4 1
OTC	18.50	6.00	Manugistics Group Inc	8.25	-0.63	-7.0
OTC	7.50	1.44	MathSoft	2.88	0.16	5.7
OTC	11.25	4.50	McAfee Associates	10.38	1.13	12.2
OTC	17.25	9.38	Mentor Graphics	11.50	0.38	3.4
OTC	24.25	11.50	Micro Focus	12.38	-0.63	-4.8
OTC	11.63	4.63	Micprografx Inc.	5.38	-0.25	-4.4
OTC	59.25	38.00	Microsoft Corp.	54.06	-3.00	-5.3
OTC	45.00	26.25	Oracle Corp.	42.38	-0.81	-1.9
OTC	44.75	21.50	Parametric Technology	34.50	1.50	4.5
OTC	24.50	13.38	ParcPlace Systems Inc.	20.50	-0.75	3.5
OTC	49.13	26.00	Peoplesoft (H)	47.50	-1.06	2.2
OTC	6.25	3.50	Phoenix Technologies	5.50	0.00	0.0
OTC	69.50	26.50	Powersoft	53.00	-0.75	-1.4
OTC	39.75	3.50	Platinum Software	11.38	-1.13	9.0
OTC	21.38	7.25	Platinum Technology	20.25	0.88	4.5
OTC	59.00	27.00	Progress Software Corp.	31.00	-2.00	-6.1
OTC	4.13	1.94	Quarterdeck Office Sys.	2.25	-0.19	-7.7
OTC	26.00	9.50	Rainbow Technologies Inc.	11.50	-0.13	-1.1
OTC	9.25	3.00	Rasterops (L)	3.50	0.13	3.7
OTC	13.25	2.88	Ross Systems	3.66	0.41	12.5
OTC	28.63	2.75	Sapiens Intl. Corp. N.V.	3.75	-0.25	-6.3
OTC	16.13	9.75	Softkey International Inc. (H)	16.00	1.25	8.5
OTC	8.63	3.00	Software Publishing Corp.	4.00	-0.38	-8.6
OTC	10.75	5.00	State of the Art	6.13	-0.50	-7.5
NYS	35.63	25.00	Sterling Software Inc.	29.75	-1.25	-4.0
OTC	19.88	3.63	Struct. Dynamics Research	4.94	0.19	3.9
OTC	57.00	30.88	Sybase Inc.	45.88	-0.13	-0.3
OTC	20.38	9.88	Symantec Corp.	15.50	0.63	4.2
OTC	52.75	33.00	SynOpsys	44.00	-1.25	-2.8
OTC	18.00	10.63	System Software Assoc. (L)	12.25	0.25	2.1
OTC	6.75	3.25	Trinzic Corp.	4.50	0.00	0.0
OTC	30.00	11.75	ViewLogic Systems	18.63	-0.88	-4.5
OTC	23.25	12.00	VMark Software Inc.	19.63	-1.88	-8.7
OTC	13.25	6.25	Walker Interactive Systems	7.25	-0.13	-1.7
OTC	60.00	29.25	Wall Data Inc.	31.75	-1.00	-3.1
Semiconductors						**OFF 4.43%**
NYS	31.75	16.75	Advanced Micro Devices	24.50	-5.25	-17.6
NYS	33.88	19.38	Analog Devices Inc.	31.25	-1.88	-5.7
OTC	32.13	10.94	Atmel Corp.	30.50	-1.25	-3.9
OTC	7.50	3.63	Chips and Technologies	5.00	0.00	0.0
OTC	44.63	24.88	Cirrus Logic	27.63	-0.50	-1.8
NYS	20.50	11.25	Cypress Semiconductor Corp.	15.75	-1.75	-10.0
NYS	20.13	13.00	Dallas Semiconductor	14.88	-0.63	-4.0
OTC	29.25	14.75	Integrated Silicon Systems (H)	26.25	-2.50	-8.7
OTC	73.50	55.88	Intel Corp.	60.00	-2.50	-4.0
NYS	39.25	13.00	LSI Logic Corp. (H)	39.25	1.50	4.0
OTC	24.75	12.25	Lattice Semiconductor	16.81	-1.81	-9.7
NYS	44.88	15.16	Micron Technology	34.13	-0.75	-2.2
NYS	55.75	42.13	Motorola Inc.	50.38	-3.00	-5.6
NYS	25.00	14.38	National Semiconductor	14.88	-0.88	-5.6
OTC	14.25	6.75	Sierra Semiconductor	14.00	0.13	0.9
NYS	89.50	55.75	Texas Instruments	66.00	-2.63	-3.8
OTC	17.25	9.38	VLSI Technology	11.00	-0.25	-2.2
OTC	12.38	2.88	Weitek	4.00	-0.25	-5.9
ASE	20.38	5.00	Western Digital Corp.	14.25	-0.50	-3.4
OTC	59.75	29.00	Xilinx	49.50	-0.38	-0.8
OTC	40.75	26.50	Zilog Inc.	32.25	-1.00	-3.0
Peripherals and Subsystems						**OFF 1.29%**
OTC	30.50	14.50	American Power Conversion	19.00	-1.31	-6.5
OTC	26.50	18.75	Banctec Inc.	24.50	-0.75	-3.0
OTC	7.75	3.25	Cambex Corp.	4.50	-0.38	-7.7
ASE	7.38	1.88	Cognitronics Corp.	2.25	0.13	5.9
NYS	20.50	9.25	Conner Peripherals	10.63	-0.50	-4.5
OTC	24.00	9.75	Creative Technologies Inc.	17.50	-0.13	-0.7
OTC	14.00	3.50	Data Race Inc.	5.75	-0.13	-2.1
ASE	10.75	4.13	Dataram Corp.	4.63	0.00	0.0
NYS	23.00	12.38	EMC Corp.	19.88	-0.13	-0.6
OTC	10.13	3.13	Emulex Corp.	8.63	-0.38	-4.2
OTC	21.00	11.75	Evans & Sutherland	12.25	-0.50	-3.9
OTC	22.50	10.63	Exabyte	21.00	0.00	0.0
OTC	28.50	2.63	Intelligent Info. Systems	3.56	-0.44	-10.9
OTC	4.38	2.00	Iomega Corp.	3.00	-0.38	-11.1
OTC	9.75	3.00	IPL Systems Inc.	4.25	0.63	17.2
OTC	28.50	13.75	Komag Inc.	26.13	0.13	0.5
OTC	8.63	4.25	Maxtor Corp.	4.81	0.06	1.3
OTC	8.75	4.88	Micropolis Corp.	6.75	0.38	5.9
OTC	22.50	10.25	Pinnacle Micro Inc.	13.50	0.50	3.8
OTC	23.00	6.50	Printronix Inc.	23.00	4.25	22.7
NYS	11.75	6.88	QMS Inc.	8.88	-0.63	-6.6
OTC	20.25	9.38	Quantum Corp.	14.50	-0.44	-2.9
OTC	8.75	7.63	Radius Inc.	7.63	-1.00	-11.6
NYS	17.75	6.38	Recognition International	7.25	-0.38	-4.9
OTC	6.88	3.63	Rexon Inc.	5.25	-0.25	-4.5
OTC	28.75	16.75	Seagate Technology	23.00	-1.19	-4.9
NYS	41.50	24.50	Storage Technology	28.75	-0.25	-0.9
NYS	40.00	21.38	Tektronix Inc.	38.25	-0.75	-1.9
NYS	109.38	70.50	Xerox Corp.	105.13	-1.38	-1.3
Services						**OFF 3.06%**
OTC	27.25	17.50	American Mgmt. Systems	25.25	1.50	6.3
NYS	4.25	2.50	Anacomp Inc.	2.88	-0.13	-4.2
OTC	22.00	14.50	Analysts Int'l	17.25	0.50	3.0
NYS	56.88	47.63	Auto Data Processing	54.63	-1.50	-2.7
OTC	18.25	14.00	Cambridge Tech. Partners	14.00	-0.75	-5.1
NYS	27.50	17.50	Ceridian Corp.	24.88	0.25	1.0
NYS	24.25	16.75	Comdisco Inc.	20.13	-0.63	-3.0
OTC	12.50	6.50	Computer Horizons	11.75	-0 25	-2.1
NYS	45.25	29.97	Computer Sciences	41.63	-2.00	-4.6
NYS	10.38	6.38	Computer Task Group	8.75	-0.38	-4.1
NYS	28.63	6.75	CompUSA Inc.	10.50	0.00	0.0
OTC	11.50	6.25	Control Data Systems Inc. (L)	6.25	-0.50	7.4
OTC	11.00	6.13	Egghead Discount Software	7.38	0.19	2.6
NYS	38.00	26.50	General Motors E (EDS)	36.75	-1.00	-2.6
OTC	21.00	7.25	Inacom Corp.	8.88	-0.50	5.3
OTC	28.00	13.63	Intelligent Electronics	15.75	-1.50	-8.7
OTC	22.50	7.00	Merisel	9.63	-0.50	-4.9
OTC	32.50	9.25	Microage Inc.	12.75	0.25	2.0
OTC	40.50	28.50	Paychex	36.25	-1.38	3.7
NYS	41.50	22.25	Policy Management Sys.	39.00	1.00	-2.5
NYS	28.25	19.00	Reynolds and Reynolds	23.25	1.75	7.0
OTC	28.50	17.00	SEI Corp.	19.00	-3.00	13.6
OTC	29.38	21.50	Shared Medical Systems	27.38	-0.38	-1.4
OTC	11.00	4.88	SHL Systemhouse	5.38	-0.19	3.4
OTC	24.25	9.25	Software Spectrum Inc.	12.00	-0.50	-4.0
OTC	42.00	31 50	Sungard Data Systems	34.00	1.50	4.2

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Chastised companies may offer price cuts

CONTINUED FROM PAGE 1

plaint was that the company added a hefty per-client charge to its server software. Lotus reaped abuse with its first attempt to change Notes pricing when it announced Notes Express, an inexpensive Notes client that does not work with most Notes applications.

Problems with pricing

At a dinner last week for corporate users, Microsoft Executive Vice President Steve Ballmer acknowledged that the company had made some "mistakes" in its pricing of BackOffice and is "rethinking" its pricing strategy in an effort to appease a wider range of users.

Bill Cornfield, president of the Windows User Support group in New York, said, "We were upset with [new SQL Server pricing] because we have a lot of casual users who might log on once a week for just three minutes, and the pricing just isn't geared for those users. But Microsoft has said they would fix it."

"They know they need to fix some problems with the pricing, but in our talks with them it looks like it can be worked out," said Arthur Tisi, chief information officer at The Metropolitan Museum of Art in New York.

At last week's Gartner Group Symposium '94 in Orlando, Fla., Lotus President and Chief Executive Officer Jim Manzi admitted that "client and server pricing [for Notes] is under close examination," but added that "things won't change on pricing before the end of the year."

Sources close to Lotus confirmed that Lotus is "seriously planning to but [is] not committed to delivering a runtime version of Notes in the first half of 1995." A runtime version of Notes would provide users with a low-cost, pared-down Notes client that could access Notes server applications created by corporate and third-party developers.

Both Lotus and Microsoft are still working on potential new pricing setups and were not ready to supply specifics, but users and analysts contacted had plenty of predictions and suggestions. They generally agreed that the companies should not gouge customers with client pricing and if they must add cost to do it with the onetime charge for the server.

Most people contacted think the companies should enact the following enterprise pricing models:

- Microsoft should come out with a less confusing pricing model that has low-cost clients accessing a higher-priced server.
- Lotus should offer a $100 version of Notes clients with limited end-user development capabilities. The server pricing could range from $5,000 to $10,000, and a developer's edition could go for roughly $1,000.

While reducing large customer costs is one goal, a possibly more compelling goal is simplifying the client/server pricing models.

"If Microsoft had even said, 'We're tripling the price on the server and stuck with an unlimited [client] license, I don't think people would have a problem with it when they compared it to the cost of other software such as Novell's [NetWare]," said Byron Jones, microsystems manager at the University of Miami in Coral Gables, Calif.

"For Notes customers, if Lotus shifted to [a client/server pricing model], they wouldn't see a huge monster differenee in the cost of the product. It would just be in a shape that they thought made sense," said Stuart Woodring, director of software strategy research at Forrester Research, Inc. in Cambridge, Mass.

This story was reported by senior writer Lynda Radosevich and senior editors Ed Scannell and William Brandel.

Shunning SNA

Some all-Microsoft shops would like to see the SNA Server removed from the BackOffice suite because they feel they are paying for something they do not need.

Subscriber privacy for sale

CONTINUED FROM PAGE 1

able to track selections and transactions they make, including home shopping, banking and movies.

"These systems have an enormous potential for surveillance," said Mary J. Culnan, a privacy expert at Georgetown University in Washington. "They can track every touch of a button," so consumers need some control over how personal information will be used, she said at a privacy conference here last week.

The inquiry began with a letter to America Online from U.S. Rep. Edward J. Markey (D-Mass.), chairman of the House telecommunications subcommittee. It then expanded to cover competitors such as Prodigy Services Co. and CompuServe, Inc.

Selling the consumer

Last month, America Online began offering its subscriber list for $100 per 1,000 names. For additional fees, direct marketers can get selections based on ZIP codes, income, PC operating systems and the ages of users' children.

"I am concerned that subscribers to on-line services may not have adequate and conspicuous notice of when information about them or their use of on-line services is being collected," Markey wrote in his letter to industry leaders. "Consumers must have the ability to curtail or prohibit the sale or dissemination of their personal information."

Conspicuous may be the key word because America Online does offer users the option to keep their name off circulated lists. But that option is several screens into the service.

Stephen Case, president of America Online in Vienna, Va., said the firm has a privacy policy. "If there continues to be confusion, we will pull the list off the market until this issue can be resolved satisfactorily," he said.

Prodigy sells demographic studies on its entire user base but does not sell lists of individual subscribers, said George Perry, Prodigy's senior vice president of legal and government affairs.

Target audience

Prodigy is in the forefront of using its subscriber profiles to sell targeted advertising on the service. For example, someone who uses Prodigy mostly for stock information will see related advertising messages at the bottom of the screen.

The opinion poll, conducted by Louis Harris and Associates, Inc. for the "Privacy and American Business" newsletter in Hackensack, N.J., found that 10% of the public is very interested in receiving targeted ads as part of their interactive service. But that figure doubles to 20% if privacy safeguards are added.

The key message of the poll, which was released at the privacy conference, was that consumers who are prime candidates for using interactive services are the same ones who want privacy.

Windows NT

CONTINUED FROM PAGE 1

of consulting time from their OEM provider or designated Microsoft Solution Provider to begin the program."

That charge can be waived at the discretion of the reseller, said Jack Steeg, assistant vice president for Windows NT marketing at AT&T Global Information Solutions in Dayton, Ohio. Prices vary among resellers, so it is difficult to estimate what the eight-hour charge would be, he added.

The program "follows the model of how people evaluated mainframes and minicomputers in the past," said Rich Tong, Microsoft's director of marketing for corporate and network systems.

Indeed, big vendors such as IBM have successfully used such programs in the past to persuade users to spend millions of dollars on systems by installing mainframes cost-free for months, thus proving that familiarity breeds contracts.

Users generally hailed the program, saying it gives them the time they need to evaluate the vendors' machines and Microsoft's server software without tying up tight budgetary funds.

"It will definitely have an impact [on us because] government is awful about trying to procure things," said Rick Gifford, a consultant and developer working on a large client/server project at Washington state's Department of Social and Health Services.

Getting a taste

"It gives me a very powerful way to give people [in other organizations] who have no familiarity with [Microsoft's server software] a chance to try it and take some of the scariness out of it without taking a machine away from my scientists," said Briscoe Stephens, coordinator for space sciences in the Advanced Scientific Information Systems at NASA in Huntsville, Ala.

Stephens said his group is already using NT Server and the BackOffice suite products, but the program will make it easier for him to promote the software to other NASA organizations.

"We've got a lot of people that are real mainframe-oriented, and that may be just what it takes to get them off the fence, especially if there's no up-front commitment," said Scott Piper, a network analyst at the Public Service Co. of Colorado in Denver.

But is two months long enough for users to become familiar with and perform serious tests on the systems from AT&T GIS, Digital Equipment Corp., NEC Technologies, Inc. and Sequent Computer Systems, Inc.? Some observers think not.

"In two months, a big company can't evaluate anything," said Amy Wohl, editor of "Trends-sLetter," an industry newsletter in Narberth, Pa. "Microsoft doesn't fully understand how big corporations make decisions. They want to change the fact that the decision-making process for picking an operating system is longer than they want it to be."

Piper disagreed. "We normally get [only] between 10 and 30 days for evaluation systems, so 60 days should be fine," Piper said.

One user who is already into the first month of the free trial program said it has been helpful.

"We had a very fixed purpose in mind [for the NT machine], and we've been very happy with it," said Jim Martin, information manager at Pacific Bell's sales agency group in Anaheim, Calif. The company has already decided to purchase the system from AT&T GIS.

And if a seriously interested customer needs more time to make an evaluation, vendors will likely be willing to extend the free trial to suit the customer.

"If 60 days isn't enough time, we'll take another look at it," Steeg said. His company is applying the program to several models that have from one to as many as eight Pentium processors.

Indeed, big vendors such as IBM have successfully used such programs in the past to persuade users to spend millions of dollars on systems by installing mainframes cost-free for months, thus proving that familiarity breeds contracts.

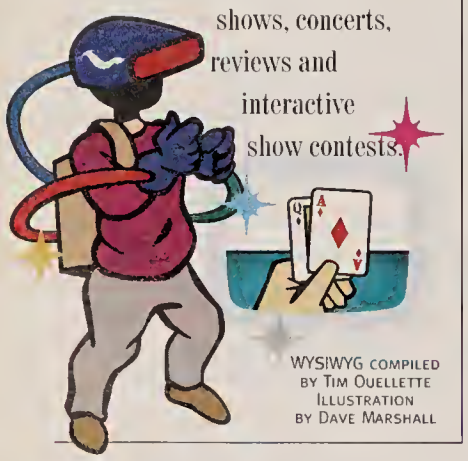
ysiwyg

The Chip is Champ

For the first time, a computer came out on top at the Fifth Annual Harvard Cup Human vs. Computer Intel Chess Challenge, held at the Computer Museum in Boston. Six top chess grand masters each played a game against each of eight different chess software packages. WChess, created by programmer David Kittinger of Mobile, Ala., received an 88.33% performance rating by winning four matches and drawing two against the grand masters. 1993 Harvard Cup defending champion Joel Benjamin from New York achieved an 81.25% performance rating in his matches against the computer for second place. Overall, the grand masters still gained 29.5 out of a possible 48 points in the tournament, though the computers' 18.5 points was their best showing ever.

But Do They Have Wayne Newton?

Virtual Vegas, Inc. in Santa Monica, Calif., has released Virtual-Vegas – Volume One: Blackjack, a $29 interactive CD-ROM blackjack game that provides a full-motion video, navigatable casino with three-dimensional graphics. Dealers acknowledge the players' presence and join them in conversation via the product's voice recognition technology. Future releases expected to round out the "Las Vegas" experience include music videos, movies, stage shows, concerts, reviews and interactive show contests.



WYSIWYG compiled by Tim Ouellette
Illustration by Dave Marshall

Fortunes without the Cookie

Random fortune cookie readings on the Internet from Temple University (Telnet to astro.temple.edu 12345)

"A closed mouth gathers no foot."
"They also surf who only stand on waves."
"You will be surprised by a loud noise."

Inside Lines

Hell on Earth, here we come

Look out, LANs. Doom II: Hell on Earth — the second coming of ID Software's enormously popular shareware game — will be launched today in New York with more than 500,000 copies already sold. And because few of us have networks at home, analysts advise company managers to cast a suspicious eye on those employees burning the midnight oil. Even at Microsoft, which created the granddaddy of all time-wasters with its Solitaire for Windows application, recently took the draconian step of banning its own staff from playing Doom. A Microsoft product manager last week admitted the game was causing Chairman Bill's troops to waste too much time. "It's staggeringly addictive," he explained.

Windows 95, a.k.a Chicago, marches on

Meanwhile, Microsoft has sent out the first copies of its M7 beta version of Windows 95, the next version of Windows, to selected developers and users. According to sources close to the company, the new beta contains all of the promised features, including the OpenGL libraries and Kodak's True Color support. Microsoft still appears to be waffling on what capabilities will appear in the final product, however. Execs warned developers that almost everything contained in the beta is "subject to change, even the APIs," sources said.

Polish up those Apple rumors

Ritualistic rumors about Apple being a takeover target were swirling again last week. Motorola and AT&T were the leading suitors mentioned in various daily newspapers, while Novell and IBM were also making the list. Users have heard these reports before and were jaded over the possibility. However, many said they would welcome Apple joining an organization with clout in the corporate market. A successful pairing could help Apple grow market share, users noted.

Wireless Wave surfing

AT&T is expected next week to unveil new roaming capabilities for its WaveLAN wireless LAN platform that will provide roaming users with access to the corporate LAN from anywhere inside a building. The technology, called WaveAround, will allow users to perform such activities as file downloading and transfer from anywhere in the enterprise, sources said. WaveAround consists of WavePoint, which provides access to wired LANs; WaveLAN/PCMCIA adapter cards for notebooks and laptops; and WaveMonitor, a radio frequency analyzer for installation and diagnostics.

Iceberg follies

Storage Technology's Iceberg mainframe disk array has become an object of almost obsessive interest on Wall Street, where short-sellers trying to knock the company's stock price down are none too subtly spreading rumors about alleged technical difficulties with the storage subsystem. StorageTek called the rumors "completely false," and several early users of Iceberg systems said the bugs encountered thus far have been relatively ordinary. Yet analysts noted that Iceberg sales do appear to be moving at a glacial pace. "The second wave of demand hasn't kicked in like StorageTek expected," said Nick Allen at Gartner Group.

Whatever do they mean? A Prodigy subscriber called last week to point out a peculiar come-on in the News Weather Screen part of the service. On the lower left-hand screen was a notice about a survey, teased with "Marrieds have better sex." Right underneath was this incentive: Windows users can see the photo. Get clicking! To get in touch with Computerworld *about news items or tips, call our 24-hour voice-mail tip line at (508) 820-8555 or our toll-free number at (800) 343-6474. News editor Maryfran Johnson can be reached by phone at (508) 820-8179, via the Internet at mjohnson@cw.com or through MCI Mail at 590-8017.*

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